JAN. 30 1959

PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

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Price 50 Cents

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If Your "Pay" Is Like One Of These Talk To Dowell About Retarded Acid

The cores you see here are from widely different areas — yet they have one thing in common. They all respond well to stimulation by Retarded Acid.

First, they all exhibit moderate-to-high solubility; they have faster-than-average reaction time with regular hydrochloric acid. In addition, they are either fractured, oolitic, vugular — or they have intercrystalline porosity. These characteristics are all favorable to the use of Retarded Acid.

Retarded Acid is designed to penetrate deep into the formation before it spends. This makes possible a large drainage area for good, sustained production.

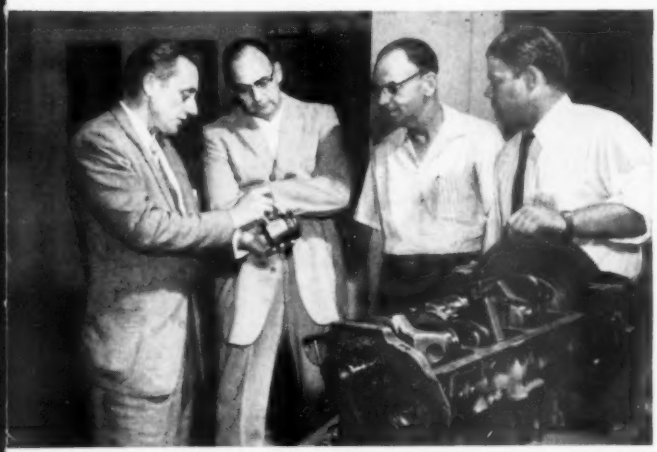
The Paradox formation has responded well to Dowell treatments with Retarded Acid. This formation is usually oolitic and highly soluble. The excellent results obtained by many operators fully justify the use of Retarded Acid instead of other treatments.

But the use of Retarded Acid is not limited to just a few formations. Recent developments in addition agents and acidizing techniques have greatly expanded Dowell's applications of Retarded Acid. Before you acidize—or fracture either, for that matter—check with your Dowell representative about the possible use of Retarded Acid in your well. For prompt service or detailed information call the Dowell station nearest you. Or write Dowell, Tulsa 1, Oklahoma.

Services for the oil industry DOWELL

DIVISION OF THE DOW CHEMICAL COMPANY

An important phase of Charlie's work is keeping up with changes in farm machinery. Getting a preview "peek" is all in his day's work. He also gets new information from Ethyl's Technical Service group in Detroit, who are in continual contact with tractor manufacturers.



With automotive engineers from an oil company, he discusses changes in tractor engines that may affect fuel and lubricant recommendations. Helping oil companies to build customer satisfaction is always a key part of Charlie's job.

An oil company executive listens as Charlie explains changes in the Fuel and Lubricant Manual on a line of farm machinery. These changes will be worked into a service bulletin for tank wagon drivers in order that they, in turn, may advise their customers.

This is Ethyl's Charlie Welch

He's an engineering specialist in farm uses for fuels and lubricants, and an analyst of farming changes as they affect sales of petroleum products.

Charlie started as a construction engineer. He worked in South America, Africa, and Russia. Later he served as a consulting engineer with a pipeline company in the United States.

Welch came to Ethyl in 1937. Since then he has used his broad engineering experience in working with oil companies serving the Midwest farm market.

In other parts of the country, other Ethyl automotive engineers are engaged in similar work with the oil companies in their areas.

Agricultural engineering is an Ethyl service to oil companies . . . typifying Ethyl's belief that service is just as important as product.

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These petroleum marketing men are listening to Charlie Welch as he analyzes trends in farm sizes and the effects of these trends on present and future sales of petroleum products. This informative study has proved its worth in planning future sales objectives.

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First use of the new system by AERO, in a survey over 40,000 square miles of the Libyan desert, has clearly established its accuracy and utility. (Ground distances can be measured in most cases to within 1 part in 1,000; drift is noted within an accuracy of 0.1°.) AERO will begin another African survey guided by Radan this month.

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INSIDE *Slant*

HOW LONG WILL IT LAST?

Recent crude price adjustments, whether justified or not, really have put the independent producer in a bind.

To make matters worse, the cuts have come in the face of rising costs—labor just went up, and there is every prospect that steel will, too.

A concrete example of the impact of the cost-price squeeze is shown in a study of his operations made by one producer.

This producer found that his average cost of finding and producing oil during the past eight years was $2.66 per bbl. His average selling price for crude during the same period was $2.55 per barrel.

In other words, he lost 11 cents on each barrel of crude he produced.

How did he survive?

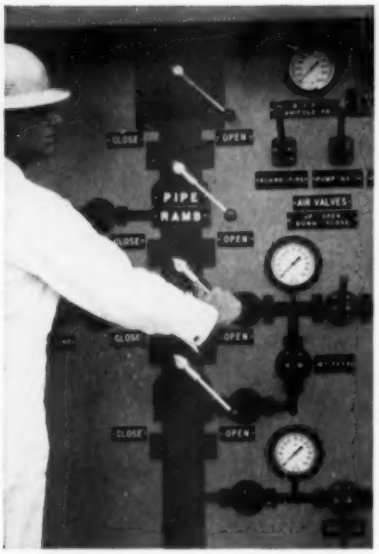
Simply because of lower-cost crude found prior to the last eight years.

His study showed that he could not have stayed in business if it had not been for the oil discovered in the '30s.

But to this producer and many others in a similar position, the oil found in the '30s cannot last forever.

This doesn't mean the nation is running out of oil. But it does mean that consideration must be given to costs if that is to be prevented.

LeRoy Menzing
EDITOR



PRESSURE CONTROLS ARE PROFIT CONTROLS

Drilling for oil today requires proper pressure control to safeguard personnel and profits. Cameron is offering a new unified drilling control system which greatly simplifies blowout prevention and completion work. Every operation in controlling hazardous subterranean pressures encountered while drilling and completing a well is now possible at one convenient station. Pneumatic pressure from the rig eliminates the high pressure hydraulic system formerly used. The new Cameron Type "F" Blowout Preventer and Cameron Gate Valves on choke and kill manifolds are operated from one graphic panel on the rig floor.

All of this means more safety, greater convenience to the operator, and of course, better control of pressure and profits. Always COUNT ON CAMERON controls for drilling and production.

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DEPT/Opinions

Views That Make News . . .

"We must face the fact that those who are politically active in this country write all the ground rules, and those of us who are not politically active have to live by those rules."

—D. A. Hulcy
Board chairman
Lone Star Gas Co.

"The proposed increase in the federal gasoline tax is grossly unfair, and it is totally unnecessary. . .

"I think that motorists must be fed up with their present tax load, when federal and state taxes on gasoline amount to 41% of the retail price."

—Frank O. Prior
Chairman
Standard Oil Co. (Ind.)

"The wage increases come at a time when the oil industry is still suffering from production cutbacks and other effects of the recent recession. . .

"We feel that these wage increases may actually defeat their own purpose by contributing to a further spread of inflation and by impairing the industry's competitive position in the energy market."

—Morgan J. Davis
President
Humble Oil & Refining Co.

"The [Harris natural gas] bill completely does away with all effective regulation of natural gas products. If passed, it will cost the consumers better than $1-billion. . .

"The greedy, unconscionable gas and oil lobby, not satisfied with extreme tax favoritism and the highest rate of return on investment, has again attempted a raid on the pocket of the American consumer."

—Rep. John Dingell
(D., Mich.)

"A major objective of our program is to see that the well servicing people assume the dignity of an industry, and not to be treated as orphan sons of the oil industry."

—James E. Danheim
Executive secretary
Assn. of Oilwell Servicing Contractors

"Texas producers, and their bankers, who once had been confident that [crude production] allowables would never be cut below 15 producing days, are now wondering whether they will ever again rise to as many as 15 days."

—William J. Murray, Jr.
Texas Railroad Commission

"I am confident we can look forward to a continued growing demand for our products, particularly for gasoline and jet fuels, but in an atmosphere of intensive competition, with an increasing need for efficiency and the willingness and ability to adjust to change."

—W. F. Kirk
Economics Dept.
General Petroleum Corp.

"Competition among companies for the better oil and gas prospects and service station sites is as real and active as in the competition for sale of products.

"The company's future would suffer materially if we failed to keep pace."

—Reese H. Taylor
Chairman
Union Oil Co. of California

. . . and Letters

Dear Sir:

Your article entitled "Survey Debunks Oil Pricing Attacks" was an excellent one [PW—Nov.28'58,p.36].

It presents a breakdown of the various marketing costs which result in Montana's higher gasoline prices. . .

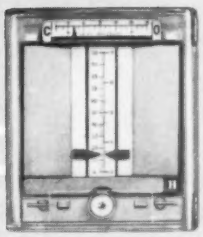
As a former native of Montana, I am well aware of the public opinion in that state to the effect that the consumers of Montana are victimized by the oil companies operating there. I shared this opinion until I read the aforesaid article.

However, there are probably not more than a handful of people in Montana who read Petroleum Week, and I therefore would suggest that it would be a good piece of public relations if this article could be circulated throughout the state. . .

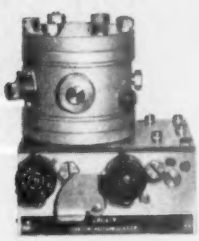
As long as the facts have already been compiled, it would be a pity not to use them to best advantage.

Earl Christensen
Claymont, Del.

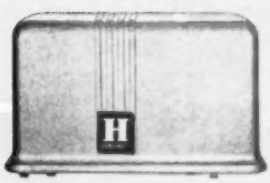
Petroleum Week *will publish reader comments each week. Address letters to LeRoy Menzing, Editor,* Petroleum Week, *330 W. 42nd St., New York 36, N. Y.*



***TEL-O-SET* RECEIVERS** can be used with any pneumatic force-balance controller. Recorder and indicator chassis are interchangeable: to make a change, or overhaul the instrument without process downtime, just pull out one chassis and slide in another. All adjustments and normal servicing can be handled from front of panel.



***TEL-O-SET* CONTROLLERS** provide proportional-plus-reset control. Quick-connect switch permits removal of controller while process remains on manual control from front of panel. One basic model controls any variable. Unitized construction of all components simplifies maintenance, makes reassembly foolproof. Rate action easily added.



***TEL-O-SET* TRANSMITTERS** are as accurate at small spans of 20 psi and 50°F as at wide spans of 150 psi and 400°F. Range is fully adjustable without adding or changing parts; no need to stock an assortment of thermal systems or spring assemblies. High-speed response to process changes permits control within close tolerances. Can be mounted at point of measurement, indoors or outdoors.

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60-Second Summary / WHAT'S HAPPENING IN OIL

January 30, 1959

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Another cost problem is in prospect for the oil industry: Higher steel prices. If steelworkers get a wage hike in June, it will be passed along to steel users. . . . p. 15

•

The "battle of the flags" is becoming a hot one in shipping circles. Seamen's unions are trying to force a showdown, possibly by spring, on the registration of ships in certain countries "to avoid taxes and high wages." U.S. companies, rallying in defense, say this is done as a matter of economic necessity. . . . p. 13

•

Has Venezuela's new tax dulled the competitive edge of its crude? There are indications that it has. It's causing some firms to trim plans while seeking ways to ease the impact of the tax. . . . p. 14

•

Note how old steel derricks are disappearing. The reason: Servicing companies are using portable masts, so it's good economics to end derrick upkeep by cutting down unused ones and selling the scrap for cash. . . . p. 20

•

A plan to tie oil imports to refinery runs may be resurrected, and on a voluntary rather than a mandatory basis. This has become a possibility largely because the Administration has been unable to agree on any other control. . . . p. 19

•

Training for refinery maintenance pays off, a California firm says. It has a special training program which is resulting in more efficiency, higher morale. . . . p. 33

•

The world's biggest tanker will soon be in service. Only trouble is, there are few ports big enough to handle the 104,500-ton vessel. . . . p. 40

•

Motor oil sales keep skidding. One obvious reason: Motorists are driving longer between changes. The last survey showed an average of 2,906 mi. . . . p. 44

•

Canadian tar sands reserves, if converted to gas by gasification, would equal a 2,700-year supply for Canadian demand plus indicated exports, a geologist estimates. . . . p. 27

•

The Independent Petroleum Assn. of America wants all energy industries to support the "energy supremacy" of the U.S. IPAA will aid by fighting for import controls, freedom of gas producers from federal regulation, percentage depletion, higher crude prices to cover costs, and a better understanding among all industry segments. . . . p. 16

Up to the Minute / SIGNIFICANT LATE NEWS

AT-A-GLANCE PETROLEUM WEEK Copyright

January 30, 1959

Plans are shaping up for an A-Bomb blast in Canadian tar sands—perhaps before mid-1960. The situation, outlined this week after a meeting between Richfield Oil Corp. and Canadian government officials is this:

- The Canadian government will appoint a "feasibility committee" to make a study and recommend approval or rejection of the project.
- The companies would pay the cost of the test ($500,000 for the bomb and $500,000 for site preparation, etc.). Richfield is asking other firms to join in, and Cities Service has already agreed.
- The U. S. Atomic Energy Commission would defray cost of transporting the bomb and would provide technical assistance. (It is understood that AEC has given "tentative" approval to the plan.)

Richfield estimates that a single shot may free 1-million bbl. of crude. It plans to fire the bomb 1,450 ft. underground, in a limestone formation underlying the tar sands. Heat from the bomb would penerate the tar sands, creating oil pools which could then be pumped out.

•

There are still some flareups on the oil labor front, despite general 5% wage hike settlements. At Port Arthur, Tex., OCAW has struck Gulf's 285,000 b/d plant in a disagreement over nonwage issues.

•

The National Petroleum Council, with a slightly new look, is back in action. NPC this week formally accepted (by a 66-1 vote) the new government regulations which the Justice Dept. had insisted on. Now there will be a government cochairman—Matthew V. Carson—whose chief duty will be to adjourn any meeting if it strays into pricing or other forbidden areas.

•

Crude imports in December exceeded quotas by 126,300 b/d. Part of this overage occurred because some companies that imported less than was permissible during earlier months were trying to take up the slack. As a result, average December imports climbed to 1,060,400 b/d.

•

Some Four Corners crude was cut 10¢ a bbl. this week. Standard of California trimmed its top posting to $2.90 a bbl. in southeastern Utah. While Shell and Pure have posted $3 in Utah, El Paso has paid a top of $2.90 in the New Mexico portion of the area, and Union Oil posts $2.80 in the Utah portion.

•

A new delay—apparently only a technicality—has cropped up in the imports-control picture. The Administration has decided there must be a new finding that crude and products imports are endangering national security, because an earlier finding was made before the 1958 change in the Trade Act. The new investigation will be made by Leo Hoegh, Director of the Office of Civil & Defense Mobilization.

Congrats and $25 to Mr. D. J. SUGGS, Republic Natural Gas Co., Tipton Bldg., Pauls Valley, Okla., for this quip.

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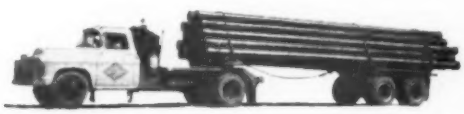

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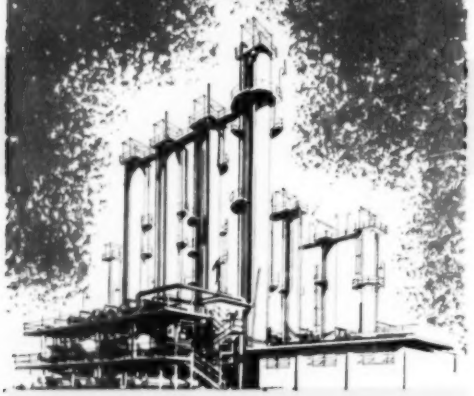

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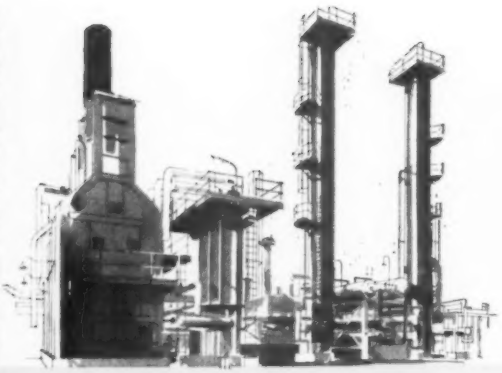

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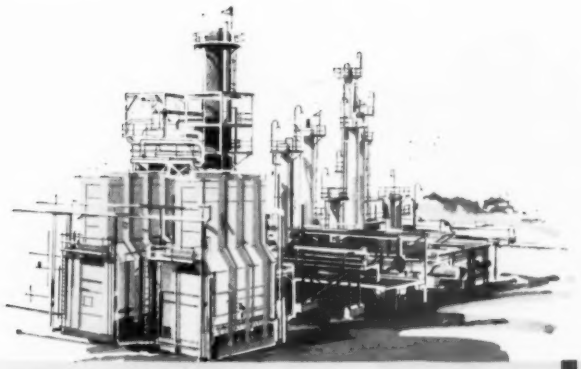

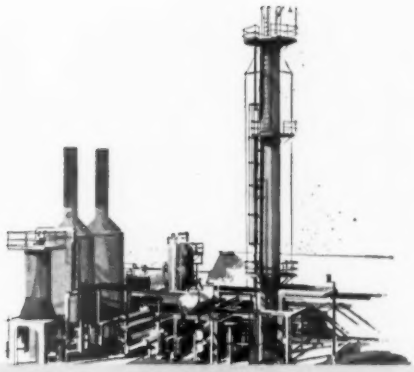

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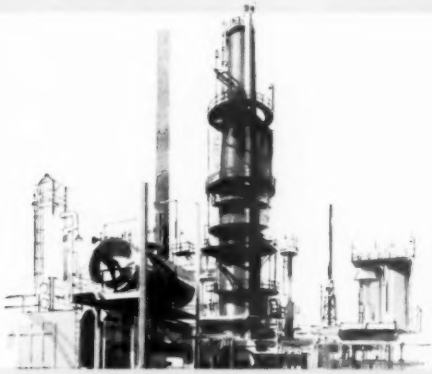

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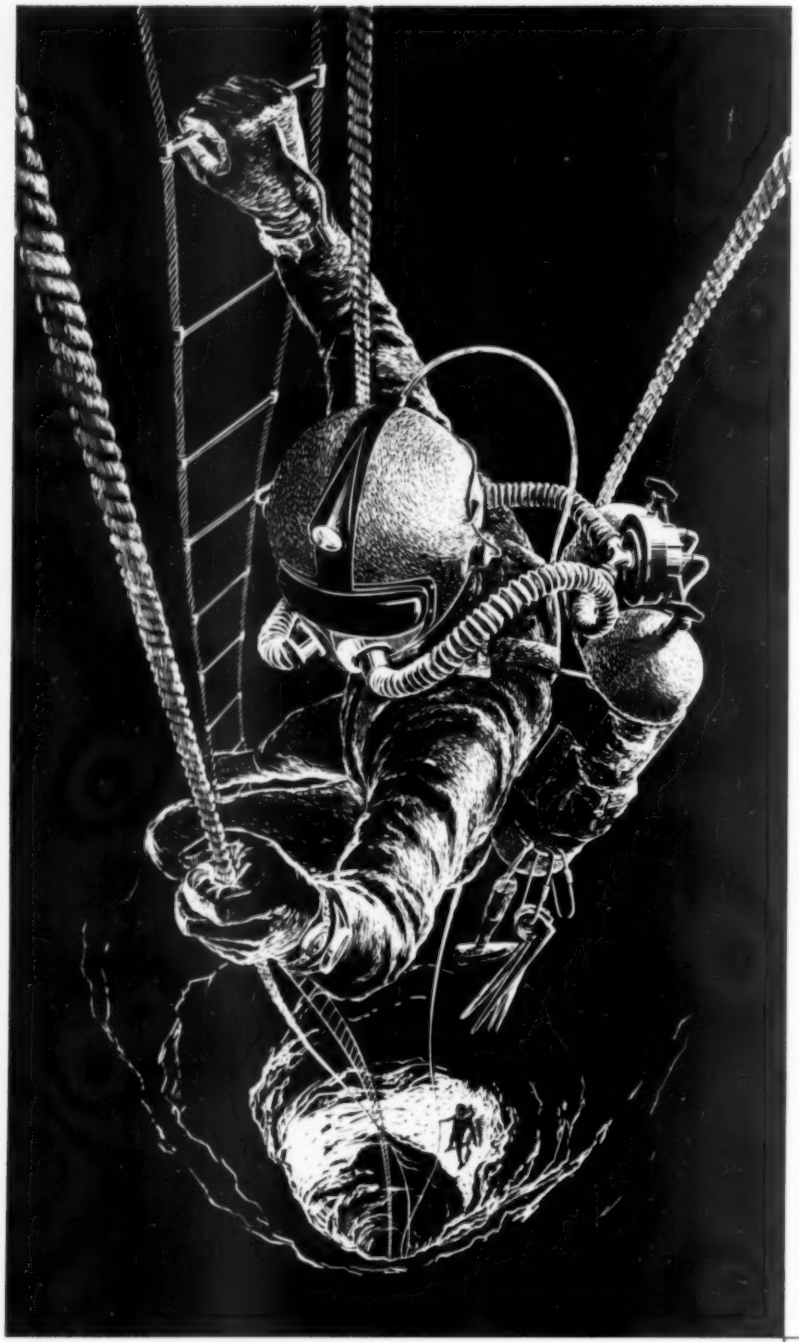

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True, there are several other methods of evaluating a formation — mostly at the end of a wire line. Each has its proper application at the appropriate time — but only after core analysis has turned the key. (Proof of performance by these secondary tools is sustained with *"core analysis data on samples from the same well, etc."*).

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PETROLEUM WEEK
January 30, 1959

Flag Fight May Disrupt Shipping

Maritime unions are stepping up their attack on "flags of convenience." Shipowners, fighting back, say they fly foreign flags through necessity, not convenience.

New maritime-union demands now threaten to tie up a major part of the U.S. tanker fleet—all American-owned tankers operating under "flags of convenience"—by spring.

American seamen's unions, namely the National Maritime Union and the Seafarers International Union, have been the loudest opponents to the growing tendency by American shipowners to register their vessels under the so-called "flags of convenience." These are flags of countries where taxes, wage scales, and other operating costs are much lower than they are at home.

The four generally accepted "flags of convenience" are those of Panama, Liberia, Honduras, and Costa Rica, although Costa Rica is no longer in favor of such agreements.

About 8-million tons of American-owned tankers are now registered under these flags.

The fight against such ship registry has been growing warmer in several places around the world, but here in the U.S., it's fast reaching the let's-step-outside stage:

The National Maritime Union and the Seafarers International Union have just finished setting up the machinery for a far more powerful organizing push on such American-owned foreign-flag tankers.

The International Transport Workers Federation, to which NMU, SIU, and seamen's unions the world over are affiliated, used to have this arrangement: Bargaining with a shipowner would be carried out by the union in the country where the crew was recruited.

Last week, however, at the insistence of NMU and SIU, the Federation changed policy. Now unions can press for bargaining with shipowners in their own countries.

Thus, in the case of a tanker owned by a U.S. firm, the bargaining could be done in this country regardless of the flag the tanker flies.

So the American unions have a clear field (as far as organized labor is concerned) to use whatever means they feel necessary to press their demands. And there is little doubt that American unions have much more ammunition than their foreign counterparts for this kind of fight.

NMU and SIU are now reportedly lining up support from several other unions engaged in sea transportation, in preparation for a spring strike or boycott if their showdown demands with American shipowners are not met.

NMU and SIU are said to be seeking the backing of organized longshoremen, ships' officers, tugboatmen, radiomen, and engineers to make any strike or boycott a real paralysis.

Oil companies owning foreign-registry tankers may become the unions' prime target.

The unions are said to feel that these companies make up the soft spot in the bloc under attack. NMU and SIU officials are reportedly convinced that integrated majors owning such tankers "could make up for the increase in operating costs resulting from a contract with a U.S. union out of their depletion allowances."

Furthermore, the unions are said to be considering using even heavier artillery against oil-company tanker owners if a strike or boycott fails: a full-scale attack on the depletion provision itself in the house organs and speeches of both maritime and nonmaritime unions.

The labor leaders realize that such an attack would get plenty of attention in Congress, where critics of the depletion provision are already in significant number.

An NMU spokesman, asked this week if such a divide-and-conquer scheme was likely, would only say, "It would be a good strategy, wouldn't it?"

The shipowners involved seem to have only one alternative to the union demands—long, drawn-out court action.

The shipowners used to say that if the unions continued to harass them about the Panamanian, Honduran, and Liberian register, they would simply transfer their vessels to flags of other nations—even traditional maritime nations—which would afford the same operating costs. But the new ITWF policy of organization by owner-nationality seems to make such moves useless.

Owners could ask for a court injunction blocking the proposed boycott. But they've learned that such requests can take too long to do any good. A request for an injunction against last year's boycott over the "flags" issue is still unsettled.

If they do go to court, the shipowners might charge the unions with restraint of trade.

Erling D. Naess, chairman of the recently-owned shipowners group called "The American Committee for Flags of Necessity," tipped off a possible line of legal attack for the owners last week.

Naess charged—as do all the owners involved—that NMU and SIU make up only "one prong in a three-pronged spearhead" now attacking American foreign-registry ships. Other "prongs," according to the committee, are (1) ITWF, and (2) the traditional maritime nations, led by Great Britain.

Naess pointed out that collaboration in restraint of U.S. trade between U.S. unions and nonlabor groups could result in prosecution of the unions involved under the Sherman Antitrust Act.

The unions and shipowners are poles apart on several issues:

- **Propriety of such vessels' taxes and operating costs.**

The NMU-SIU bloc charges that "ships registered under flags of convenience are runaways from U.S. tax laws."

The "necessity group" answers that the Panamanian, Honduran, or Liberian subsidiaries set up for such ship registry pay dividends to their American parent companies, dividends which are subject to the regular corporate tax.

The unions also claim that the foreign registry makes it possible for American tanker-owners using such registry to pad their pockets with profits.

But the tanker owners say that high American labor costs would make it

impossible for them to compete with the tanker fleets of the "traditional maritime nations." Some of these nations subsidize their tanker operations despite the fact that they have crew wage scales well below that of American crews.

• Seaworthiness and safety. NMU-SIU spokesmen claim that such ships "undercut union standards" in shipboard conditions.

The "necessity committee," however, says its ships are built in strict accordance with the rules of the American Bureau of Shipping, the requirements of the International Labor Organization, and the International Convention for Safety of Life at Sea.

• Availability of such ships during a national emergency. "Convenience" opponents bewail the "decline of the U.S. tanker fleet" —they mean tanker tonnage under U.S. registry—and have questioned just how effective this nation's control would be over the ships registered in other countries.

The "necessity committee" says the Dept. of Defense considers Panama, Honduras, and Liberia "the only foreign countries compatible with our nation's policy of 'effective control'—meaning that in the event of national emergency, these American-owned, American-controlled ships will be immediately available for our defense requirements."

PETROLEUM COMMENTS / By Wanda M. Jablonski

Ways Sought to Ease Venezuelan Tax Impact

The sharp 20% to 29% hike in Venezuelan oil tax costs is already beginning to be reflected in oil operations in that country.

One American company with production in both Venezuela and the Middle East has cut back its Venezuelan heavy crude shipments by 15,000 b/d.

The reason: Up till now, that crude had been slightly more competitive than comparable U.S. crude. With the higher tax cost now, however, it has lost that edge. Therefore, the company is replacing the Venezuelan oil with domestic, and is shifting its import quota to more profitable Middle East crudes.

As pointed out in this column Jan. 9, other producers are similarly re-evaluating their Venezuelan shipments vis-a-vis Middle East oil.

Generally speaking, the more marginal types of Venezuelan heavy crudes will be the first to feel the cut. New development of heavy crude fields will feel the axe, too, as will drilling programs in marginal high-cost areas. Several companies have already canceled 1959 drilling plans for Boscan crudes and in some western heavy crude fields.

The more profitable Lake production is less likely to be affected—though even here some expansion projects may be postponed for budget reasons. All operators are badly strapped for cash to meet the unplanned extra $200-million retroactive tax hike for 1958 (PW—Jan.9'59,p30). Creole, for instance, is hoping to slash its 1959 budget by 20%.

In some cases, the new tax bite is turning out even bigger than the first quick estimates indicated. Creole last week officially announced that its 1958 earnings (still unaudited) will fall to approximately $239-million on the new basis. This is a slash of $99-million from its previously estimated 1958 earnings of $338-million—a cut of 29%.

It amounts to a profit split of almost 65% for the government and only 35% for Creole. (It also represents a drop of $158-million from Creole's net income of $397-million in 1957, a peak profit year.)

Though there's little prospect of Venezuela rescinding the tax hike, there are several measures of tax relief oil men hope to discuss with Caracas.

One is the method of evaluating royalty oil (A minimum of 16⅔% of production). The government computes its value on formulas based on U.S. Gulf Coast prices—which results in an unrealistically high valuation of the crudes compared to their actual market values. One major producer, for instance, says its 16⅔% royalty thus actually works out to 21%.

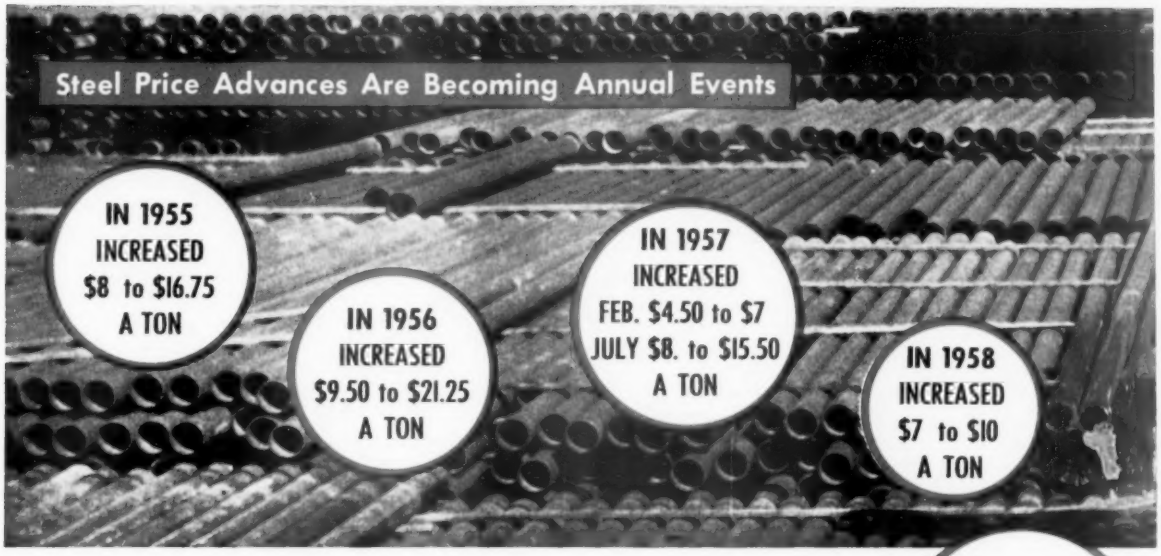
The industry may well have a strong legal case here. The Venezuelan law specifies that royalty oil is to be computed on the value of the crudes in local markets—with the alternative of U.S. prices to be used if local prices are nonexistent. When the present formulas were drawn up, few prices were posted in Venezuela. In recent years, however, separate market postings have become well established there.

Another major question is that of computing income taxes on producers' actual realizations on their sales. In some cases, the tax authorities have accepted discounts off posted prices, but only when these could be clearly documented as arm's length transactions with nonaffiliated buyers and involving incremental production that would otherwise be lost.

(Creole some years ago also was able to work out a special formula with the government on sales to its affiliated refinery at Aruba whereby its crude sales price is related to the market value of the products. Starting this year, Shell is reported to have put its crude sales to its affiliated refinery at Curacao on the same basis in the hope that the same terms would be applied to it.)

With increasingly cut throat competition for crude outlets during the past year or so, however, increased volumes of Venezuelan crudes necessarily have had to be discounted both to third parties and to affiliates (directly or through transportation and other gimmicks) if the sales were to be made at all. Some of the newcomers, for instance, have had to offer as much as 80¢ off to get outlets.

Some oil men are hopeful the tax authorities will now be willing to look at this picture realistically in the light of existing market conditions—particularly now that the Venezuelan industry is hampered competitively by its higher tax base.



Will Steel Go Up Again... IN 1959 ?

The oil industry, which was just billed for increased wages, can look forward to higher price tags on steel later this year.

That's the opinion of many oil and steel men alike, as they look ahead to the June 30 expiration of the present three-year contract between the steel companies and the United Steelworkers of America.

Steel prices have increased in nearly every year since World War II, based on wage hikes won by the union.

And the price hikes for oil-country tubular goods and line pipe generally have exceeded the average price boost for all steel items by a considerable margin. In the past four years, the major steel items used by the oil industry have increased by an average of from $9.25 to $17.60 a ton annually (chart, above).

The almost certain price boost for steel would hit producers the hardest, and would come at a time when crude prices continue weak.

The gradual crude price reductions during the past 18 months all but wiped out the general advance of 25¢ a bbl. in postings made two years ago.

And studies by the Independent Petroleum Assn. of America show that 25¢ advance was not even sufficient to offset the increased costs of producers' material and wages at that time.

One major company representative, noting that higher steel prices will obviously increase producers' costs, says: "These costs will have to be offset in one way or another. But right now, I don't know just how it will be done."

A supply firm division manager in the Southwest predicts that an increase in steel prices will bring an increase in slim-hole drilling.

In addition to the expected hike in steel prices after midyear, many observers predict a strike by the Steelworkers Union to enforce their wage demands, which would interrupt the flow of steel supplies.

The stage for a strike is being set now. The union has started promoting its wage drive with newspaper ads and radio commercials, even though negotiations with the steel makers won't start until May.

Steel producers are using the same media to reach the public to counter the union's arguments.

And while the Steelworkers say they expect a wage boost above the so-called productivity increases, the steel companies appear set to buck such demands.

The comment of one company official to PETROLEUM WEEK is typical of the industry's view: "We will have to resist any unreasonable wage demand—our customers expect us to do so."

But the same spokesman adds: "I believe there will be a strike."

Oil industry steel orders already are being stepped up some.

Some companies have returned to normal buying after living off inventories, while others are buying more steel to hedge against a possible strike and higher prices.

One large supplier of oil country tubular goods says the pattern of incoming orders shows conclusively that the oil industry's liquidation of its steel inventories is over.

"Our December shipments," he notes, "were the largest for any month of 1958, and the pattern of increased buying continues."

One major company has sharply stepped up its buying of oil country tubular goods for the first six months of 1959. It reports that present stocks plus orders scheduled to be filled in the first half will take care of its entire planned drilling program in 1959.

Most of the stepped-up buying is by producers and gas pipeline companies—the latter moving ahead with new construction following the Supreme Court's reversal of the "Memphis" decision. In fact, some mills now are allocating plate, required for large diameter pipe.

National Supply Co.'s Ambridge (Pa.) seamless mill has gone on a round-the-clock operation to keep abreast of incoming orders for oil country goods.

On the other hand, refiners and oil pipeline companies generally have

not increased buying. A southwestern refiner reports it isn't really anxious for steel now, due to a lack of construction scheduled for 1959.

A pipeline company in the same area cites a similar reason for not hiking its steel orders. And another pipeline reports a "surplus" of line pipe, which "could make excellent trading stock if we need sizes other than those in inventory."

Ordering of oil industry steel would be even higher now if money were available for inventory buying, one supply company manager believes.

The tightness of money, he says, seems to be hitting the major producers just as much as the independents.

Many of the smaller operators, he notes, had a lot of money tied up in steel inventories during 1958, and they are using up all available tubular stocks before reordering.

However, most supply company officials predict a big upswing in steel orders in the second quarter.

Another reason why there hasn't been any really big rush on steel orders yet is that field stocks of oil country steel items are in better shape than in previous years of labor troubles. And transient stocks are available now.

The latter consist of oil country tubular goods loaded on barges at "down river" locations, as one Pittsburgh steel man describes them. Those stocks, he says, could be moved to field stores in the event of a strike.

"Over-all," he claims, "we are in good shape, and I can't see that a strike of up to 60 days would cause any real problems to oil producers other than a possible tightness of some specialty tubular goods items."

A spokesman for an independent refining company reports that it is looking over its "critical" steel needs, such as alloy tubes that might become hard to find during a strike.

And a producer says: "We have a lot of special problems caused by deep drilling which necessitate our purchasing special types of steel. If it weren't for those specialty needs, we would not be advancing our steel orders, even though the market is tightening."

Some producers appear to be watching budgets carefully, awaiting a more positive indication of an economic upturn before stepping up operations.

Rotary rigs running in January are about 5% under a year ago, even though some estimates are that total footage to be drilled this year may exceed 1958's 194.8-million feet (page 17) by as much as 5%.

IPAA Offers Energy 'Plan'

The Independent Petroleum Assn. of America is inviting all energy-supplying industries and the government to cooperate in a program aimed at maintaining "energy supremacy" for the U.S.

Gordon Simpson, IPAA president, and president of General American Oil Co. of Texas, announced the program this week. He said letters were being sent to 200 leaders of energy industries, including oil, gas, coal, chemical, water power, electrical, and uranium suppliers, and related trade associations.

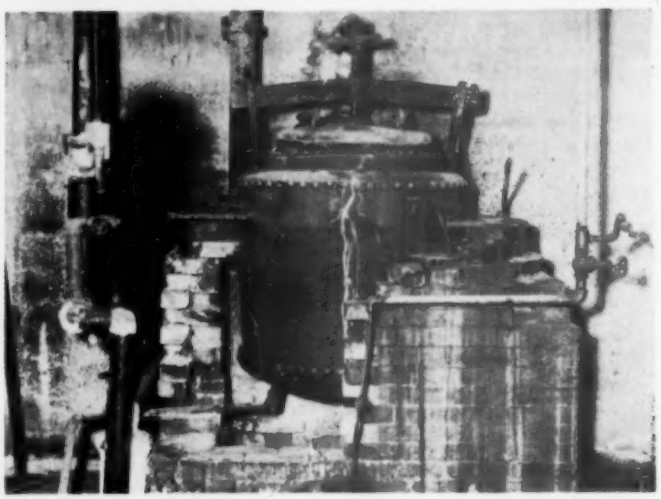
Per capita use of energy has doubled since 1900, and energy use promises to continue to increase at a faster rate than the population, Simpson said. IPAA estimates show that total energy use in the U.S. by 1968 will gain 34.2% over 1957, to a level of 56.5-quadrillion Btu. equivalent.

Oil and natural gas, IPAA predicts, will be filling 73% of the total domestic needs by 1968, compared to 69% of the 42.1-quadrillion Btu. of total energy used in 1957.

For its part, IPAA is pledging a ten-point program designed to maintain the U.S. oil and gas industry "as the bulwark of our energy base."

IPAA will: (1) foster and support geologic investigation to show the adequacy of petroleum reserves; (2) seek to establish better understanding among all industry segments; (3) study more efficient recovery of petroleum, with emphasis on cost reduction; (4) show the need for adjustment in prices to compensate for rising costs to producers; (5) expand efforts to gather and disseminate information on tax provisions applying to petroleum production; (6) seek limitations on petroleum imports; (7) press for relief of gas producers from federal utility-type controls; (8) broaden its fact-finding efforts to help solve the problems of finding, developing, and producing oil and gas; (9) encourage multiple use of public lands for energy development; and (10) cooperate with all energy-producing industries to interpret the problems threatening energy development.

Oil Man's Album



'A Truly Technological Breakthrough for Oil'

In 1912, three research chemists of Standard Oil Co. (Ind.) made oil history with a cracking process to increase the gasoline yield from crude. They were William M. Burton, Robert E. Humphreys, and Francis M. Rogers. Many years later, the pressure vessel of the Burton-Humphreys experimental still was found in storage as part of an old cutting-oil still. Restored, it was presented to the Smithsonian Institute last year to represent a turning point in American industrial history.

(No. 22 in a Petroleum Week series.)

Drillers Look to Better Year in '59

U.S. drilling in 1959 may show at least a "nominal" increase over 1958, assuming a "more sensible control" of imports and a "more equitable distribution" of capital funds for domestic needs.

That's how the American Assn. of Oilwell Drilling Contractors estimates the present year, after tabulating the drilling results for 1958.

In making its forecast, AAODC readily points out that 1959 is a difficult year to predict. In addition to the present uncertainty over import controls and the employment of capital by producers, the association calls attention to such other unknowns as the possible action by Congress to reduce percentage depletion.

Over the long haul, the association predicts that conditions will improve. It bases this optimism on estimates of increases in future consumption, and on recognition of "the extreme need for developing adequate domestic reserves."

Preliminary data show that the footage drilled last year was the lowest since 1952, and that the average contract price per foot drilled was the lowest since 1943.

Footage drilled in the search for oil and gas dipped to 194,756,301 ft., compared with a revised figure of 219,403,102 for 1957, and 186,389,000 ft. in 1952.

The estimated 48,312 holes completed were also the smallest total since the 45,879 in 1952.

Last year's average contract price of $4.50 per ft. drilled matched the average figure for 1943. The last time the average price was lower was in 1942, when it was $4 a ft.

Considering contractor costs, and after allowing for improved penetration rates, last year was possibly the worst in recent history for drilling contractors.

Total rotary drilling costs in 1958, according to AAODC data, were 108% higher than they were in 1941 (when contract prices averaged $4.25 a ft. Penetration rates—the measure of contractor efficiency—went up again in 1958; the average drilling time per hole was reduced to 52% of the 1941 average.

Compared with 1957, total rotary costs were up two percentage points, and the penetration rate improved by two percentage points.

But despite the tighter cost-price squeeze on drilling contractors, they drilled a higher percentage of the total footage last year than ever before.

The association reports that contractors accounted for 95% of the footage drilled, a rise of two percentage points over 1957, and the sharpest year-to-year rise since 1951. Over-all, the contractors drilled 185-million ft., or 45,896 completed holes.

Average total drilling costs to producers declined to $13.25 per ft., the same as in 1955.

AAODC attributes the decline in total costs from 1957's $13.60 a ft. to: (1) a smaller percentage of wildcats drilled, (2) "slight modifications" in some casing programs, (3) the fact that average well depth was slightly less in 1958, and (4) the improved rate of penetration.

The average depth per hole last year was 4,031 ft., compared with 1957's record average depth of 4,103 ft. per hole. Over recent years, though, the trend generally has been to increasingly deeper holes—a trend that is expected to continue.

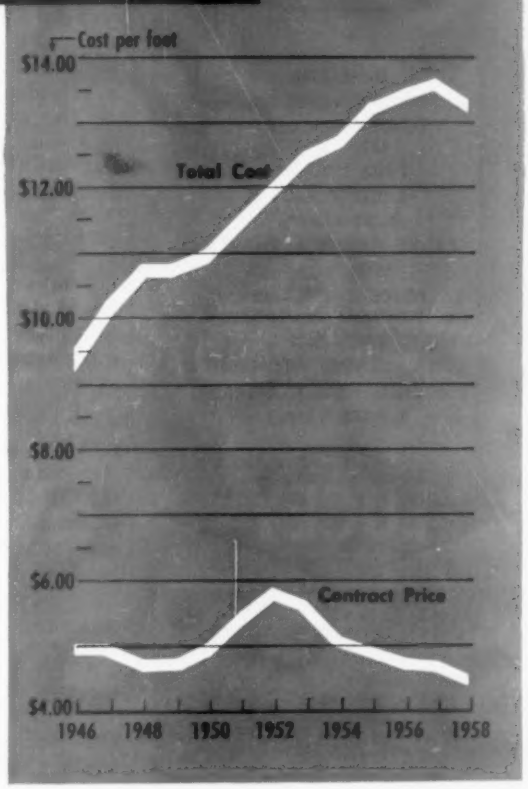
The number of active rotary rigs declined to a ten-year low. Rigs in operation in the U.S. and Canada averaged 2,086, a drop of 20.4% from 1957, AAODC compilations show.

Drilling FOOTAGE trends

Year	New Holes Completed	Footage Drilled	Average Depth Per Hole
1946	30,230	101,124,813	3,345
1947	33,147	112,816,124	3,404
1948	39,477	136,709,153	3,463
1949	38,962	138,616,941	3,558
1950	43,204	159,393,997	3,689
1951	44,196	173,315,000	3,869
1952	45,879	186,389,000	4,060
1953	49,279	197,920,000	4,016
1954	53,650	215,940,250	4,025
1955	56,850	229,901,400	4,044
1956	58,271	234,350,550	4,022
1957	53,472	219,403,102	4,103
1958	48,312	194,756,301	4,031

1958 estimated by AAODC. 1957 revised by AAODC.

Drilling COST trends



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What's New / IN THE INDUSTRY

A proposed tax on Texas natural gas, to be paid by "beneficiaries," has drawn protest from a leading oil group. Charles W. Alcorn, president of the Texas Mid-Continent Oil & Gas Assn., terms the 3% "severance beneficiary" tax on gas proposed by Gov. Price Daniel "another raid on the petroleum industry." The new tax would be in addition to the 7% production tax.

The new tax would be paid by any severance beneficiary engaged in production or obtaining production. "It would be paid by the producer only if there is no severance beneficiary to pay for it," Daniel explained. "I feel sure that Texas people who may end up paying part of this tax on gas consumed in this state will be glad to do so in order to see that those who are consuming 53% of our production outside the state pay a just tax on this natural resource."

•

OCAW is launching a campaign against a federal gasoline tax hike. The oil industry's biggest union feels that the tax on gasoline—a necessity—already is too high, and that too much of the revenue is being diverted from road-building. Also, union leaders fear the tax may cause consumer demand to decline—thus hurting oil workers as well as oil companies.

Other major unions may join the drive. It is known that OCAW's Jack Knight is seeking to enlist the support of Walter Reuther and other top labor officials.

•

Hearings will start Monday in Ft. Worth on Texas' suit to block a merger of Texas Pacific Coal & Oil into Sinclair Oil. Last week State District Judge Jack M. Langdon issued a temporary restraining order based on antitrust suit filed by Texas Attorney General Will Wilson. The antitrust suit named Sinclair, Texas Pacific, and Lehman Bros., New York investment bankers, as defendants.

"The purpose of this suit," Wilson said, "is to preserve . . . Texas Pacific as a going concern through enforcement of antitrust laws . . . We do not feel that it should be swallowed up in the fashion attempted simply because Sinclair needs more proven reserves of oil."

•

February allowables in Louisiana, Kansas, and Arkansas will be continued at the January level. The Louisiana allocation, based on 34% of the March, 1953, depth bracket, is 863,621 b/d, up 7,481 b/d to allow for new production. Kansas' February allowable is 327,000 b/d, and Arkansas' allocation is 85,000 b/d.

•

A plan for development of the Free World's economic strength by private American capital is being advocated by T. S. Petersen, president of Standard Oil Co. of California. He proposes (1) to stimulate foreign investments by U.S. capital, (2) to encourage free trade through mutual tariff reductions, and (3) to "tell the citizens of this country what our foreign ventures have meant to the less-developed countries and to this country itself."

•

Jersey Standard says its 1958 taxes were more than four times its net earnings. It estimated net earnings at $564-million, equal to $2.73 a share. Taxes paid to all governments were $2.3-billion, equal to $11.33 a share. This includes an estimated $90-million increase resulting from the new Venezuelan income tax on Jersey Standard's affiliates there.

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
January 30, 1959

The Administration may circle back to refinery runs as the basis for voluntary imports restrictions. Here's why: The Cabinet committee on imports has been unable thus far to agree on any other plan—voluntary or mandatory—largely because of the Justice Dept.'s adamant stand against dividing the imports market between historic and new importers. The refinery-run plan was submitted by Imports Administrator Matthew V. Carson last fall, but was shelved. Now it's being given a second look. No decision has been made, however, and many officials still believe a mandatory plan is the best bet.

The Justice Dept. is questioning the certification of petroleum products imports as "endangering the national security." This problem may have to be ironed out before any new imports control plan is proposed. The antitrusters are not sure that the Office of Civil & Defense Mobilization followed all the ground rules in certifying products. So there is a possibility that OCDM may be asked to go through the lengthy procedure of hearings and more data-gathering on products.

•

The White House is encountering heavy opposition to another gasoline tax increase. Congressmen who oppose the proposed hike say they are heartened by the strenuous protests that are coming in. They point to an announcement by Gov. Price Daniel of Texas that 29 governors are against the increase, and that a governors' committee to oppose the higher tax will be formed. But both sides agree that a compromise might be possible—that an increase of ½¢ or 1¢ per gal. could be the final result.

•

Sen. Olin D. Johnston (D., S.C.) is pushing for more protection of U.S. investments abroad. Johnston is sponsor of a resolution that would create a special commission to study the safety of foreign investments. Recommendations would be made to protect U.S. operations—both government and private—from expropriation. Such a commission, if approved, probably would study U.S. oil operations abroad and steps that could be taken to prevent nationalization.

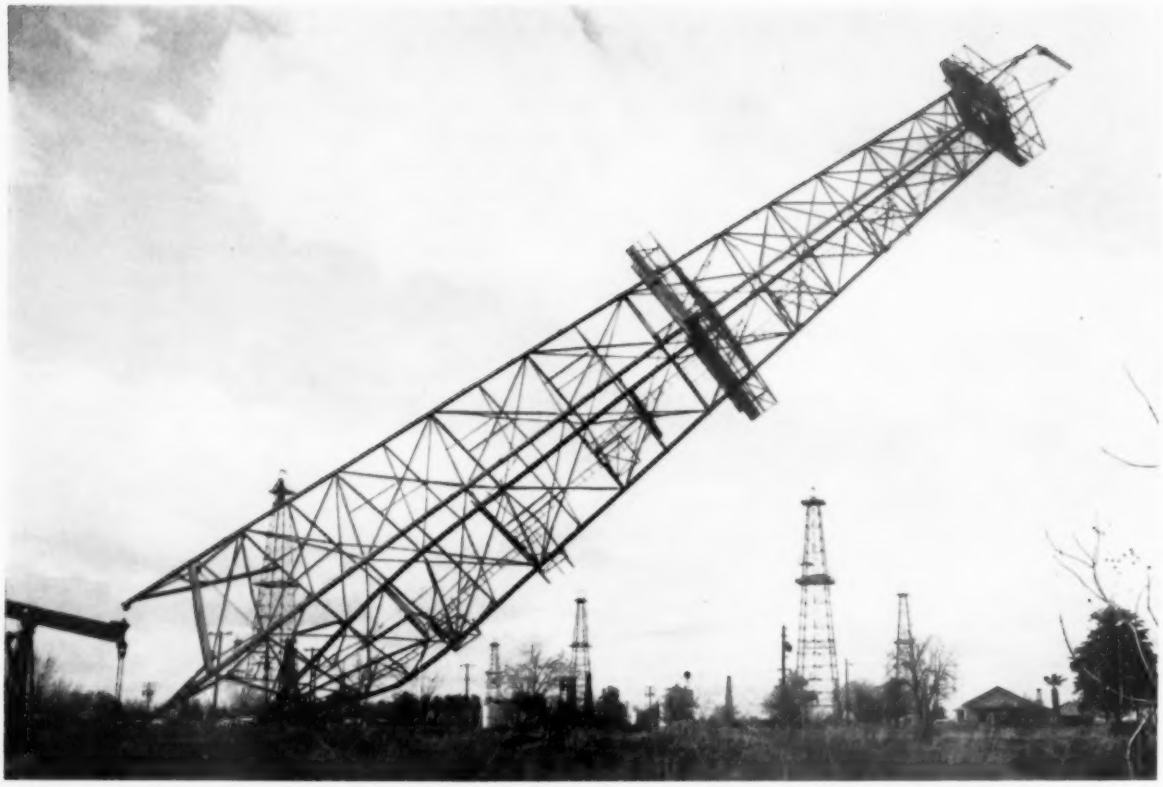
•

Gas bill foes may try to put pressure on the Federal Power Commission for tighter regulation. Some consumer-state congressmen who have opposed natural gas bills in the past now believe they are in the driver's seat—that no decontrol bill will pass Congress this year, and that FPC should be told to adopt a definite system of controls for gas producers. The thinking is still in the early stages, but FPC officials may get some stiff quizzing.

•

Rep. Wright Patman (D., Tex.), a long-time antitruster, is having trouble. It centers around formation of the House Small Business Committee, which he has been heading. (This is a committee which must be recreated each session.) Republicans are complaining that Patman's performances have been too partisan and nonconstructive.

Patman probably will weather the storm, but GOP opposition, plus signs of revolt by some Democratic committee members, may take the steam out of his plans, including his proposed investigations of oil marketing.



ON ITS WAY to the scrap yard is this derrick, being junked by Western Gulf Oil in Fruitvale field, Kern County, Calif., as . . .

Economic Axe Topples Steel Derricks

The steel derrick—long an impressive symbol of the oil industry—is joining its wooden predecessors in the march into history.

Steel replaced wooden derricks for drilling back in the '20s, and portable masts began crowding standard steel derricks in the '30s.

But still, many wooden and steel derricks remained standing over their wells—to be used only for an occasional well servicing job, or by artists, who saw in them the reflection of an industry.

In recent years, the wooden derricks have fallen under the combined push of wind, termites, old age, and numerous safety programs (PW—Dec.20'57, p26).

Cutting torches are now toppling the steel derricks, not only because they have outlived their usefulness, but also because they have become an economic liability.

One example of the trend: Western Gulf Oil Co. is scrapping all of its 128 steel derricks in the 30-year-old Fruitvale field, Kern County, Calif.

CUTTING TORCH reduces the once-proud derrick to truck-size, scrap-metal chunks.

The derricks, 122 x 24 ft. and 136 x 26 ft., for the most part were erected between 1928 and 1937, when Western Gulf was developing the field. A few, however, were put in as late as 1946.

Derricks were erected by four-man crews who, if all the necessary parts and equipment were on hand, could build a derrick in a day's time, bolting the pieces together around a gin pole, which was used to raise the individual

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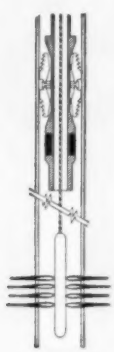

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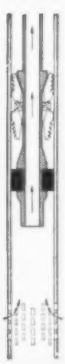

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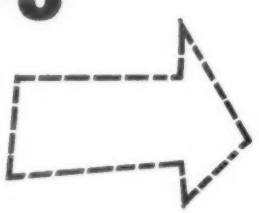
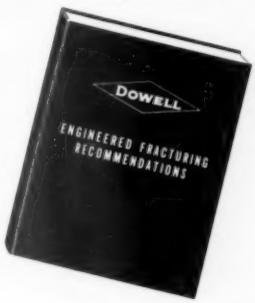
DOWELL ANNOUNCES

an important, new advance in oil and gas well fracturing



Dowell's New "Fracturing Guide" has increased success ratio of oil well fracturing treatments from less than 60% to 97%!

Dowell engineers, working closely with leading oil and gas producers, have now developed a revolutionary new technique for engineering fracturing treatments to yield optimum results.



More than 300 treatments using this new method have been made. They indicate that the success ratio of fracture treatments can be increased by more than 50 per cent.

This new system of designing well treatments is based on tables and graphs contained in a manual now in use by Dowell engineers. In preparing the manual, "Engineered Fracturing Recommendations," Dowell engineers consolidated and correlated industry-accepted calculations, reservoir data, frac fluid properties, and their own experience from thousands of treatments. The "Guide" has been equally effective on both old and new wells.

How is the "Guide" used?

First, your Dowell engineer needs a reasonable amount of information about your well. Then he uses the charts and formulas compiled in the manual to design a fracturing treatment to fit that particular well. The "Guide" helps you:

1. *To choose the proper fluid and additives to meet reservoir conditions.*
2. *To predict the fracture area created on any treatment.*
3. *To choose the proper treating volume on re-treatments.*
4. *To get high-capacity fractures on each treatment.*
5. *To reduce sandouts that are not planned.*
6. *To predict surface pressure conditions prior to job performance.*

Results have been a spectacular increase in the number of successful jobs. Benefits have included faster payout, lower lifting costs, high production and greater ultimate recovery because of *better decline curves.* Really *engineered* fracturing using the new "Guide" is available *only* from Dowell.

This extra service costs you nothing — yet the benefits have been nothing short of amazing. Call your nearest Dowell engineer for more information. Get him to *engineer* the treatment for your next well. In Canada, call Dowell of Canada, Ltd.; in Venezuela, United Oilwell Service. Dowell, Tulsa 1, Oklahoma.

Services for the oil industry DOWELL

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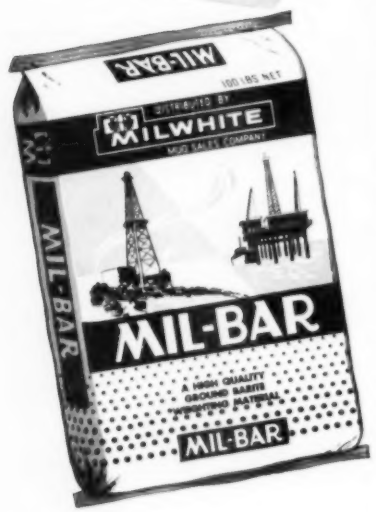
Mud Service by Milwhite Pays!



MILWHITE

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pieces into position. The cost of the derricks ranged from $2,600 to $3,500.

Now a four-man crew topples a derrick in less than half an hour's time by cutting its legs and winching it over. Once on the ground, the derrick is cut into pieces for the trip to the scrap yard.

The standard use of portable masts by well servicing contractors, the cost of derrick upkeep, and taxes are the main reasons behind the drive to the scrap yard.

The biggest factor is the almost unanimous swing by servicing contractors to the use of their own masts.

Because of this, when a contractor moves onto a location to service a well under a derrick, he usually has to rerig his lines and block off his mast into the derrick—an operation which requires around 45 minutes.

Since operators pay servicing contractors on an hourly basis—the rate varies from $20 to $27 per hour—the cost of making the changeover adds up when many wells are serviced.

In the Fruitvale field, wells are "pulled" with varying frequency—some every three months, others no more often than every two years.

Another factor: Derrick maintenance is estimated to cost between $55 and $58 per derrick per year.

Upkeep and replacement of lights is one main item. The normal derrick has five to seven lights, usually 200-watt vapor lights, which are frequent targets for frustrated hunters.

This is in contrast to some Southwest Texas counties, where game wardens have been known to use the derricks as lofty hideouts for spotting poachers.

Safety upkeep also is a factor. It is necessary, occasionally, to replace bent portions of the frame, and boards used as work platforms in the derrick. Replacement and greasing of crown blocks and sheaves also spells costly upkeep time.

A final factor is the yearly county taxes on the derricks as existing equipment.

Sale of the steel scrap brings a further monetary return to the operator.

There are an estimated 14 to 16 tons of steel in each derrick. With the going price of scrap around $23 to $25 per ton, depending upon the quality of the steel, a demolished derrick is worth from $322 to $400. The scrap company is pulling down the derricks without charge.

Any income from the scrap will be nominal, however, Western Gulf figures, compared to the savings that will be realized over the years.

Service Contractors See Rise

Oilwell servicing contractors are cautiously optimistic over their business outlook for 1959.

This was the tone most evident at the third annual meeting of the Assn. of Oilwell Servicing Contractors, in Dallas, Jan. 16-17.

A typical comment was that of J. F. McAdams, of Hobbs, N. M., who said that the contractors are not overly optimistic, but that they do expect business to take a turn for the better in 1959.

McAdams is outgoing AOSC president.

He added that 1958's recession has caused most contractors to proceed with a little more caution than they did in 1956 and 1957, and that they are taking a harder look at costs.

The contractors say a pickup in secondary recovery projects adds luster to 1959's outlook.

Secondary recovery projects, which have been increasing at an accelerating rate, mean business for the well service contractor. The contractors account for a large share of the injection and service wells that are used in these operations.

Many expect 1959 business to maintain the level reached in the last quarter of 1958.

The refinery strike threat, now no longer in the foreground, drew close attention from the contractors, since widespread strikes definitely would have cut production activity, and thus reduced the need for well servicing (PW—Jan.23'59,p15).

Texas Railroad Commissioner William J. Murray, Jr., spoke to the contractors on the impact of imports on domestic production.

"Unnecessarily large imports today, resulting in reduced domestic production, and consequently in reduced domestic exploratory and development activity, will inevitably reduce domestic availability in the future, necessitating even larger imports then," Murray said.

He said that, although there will be a continual rise in domestic demand for petroleum over the next ten years, there is no available evidence to justify predicting continually increasing domestic reserves and availability, but he expressed a hope for more exploration in the country.

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Chromatography May Help Oil Search

Direct finding of oil and gas in stratigraphic traps may be aided by recent laboratory discoveries at Fordham University, New York City.

Preliminary details on these findings were reported this week to PETROLEUM WEEK by Bartholomew Nagy, assistant professor in the department of chemistry. Nagy formerly was with Cities Service Research & Development Co., where he directed geophysical and geochemical research.

One important discovery: The migration of fluids through a geological column is, in effect, a chromatographic process.

Chromatography, in the research laboratory, is the fractionation and concentration of mixtures of organic compounds as they flow through glass columns packed with powdered solid particles.

"One may visualize the sedimentary strata as a very tall chromatographic column through which fluids migrate," Nagy says.

He says the discovery that chromatography operates in sedimentary rocks will be helpful in explaining the accumulation of organic compounds such as petroleum, even though the exact details of the various chemical processes in sediments are still unknown.

It is believed the Fordham tests mark the first time chromatographic experiments have been carried out in simulated geological environments, with resulting mathematical formulas applied to rock strata.

Nagy says the composition of organic material that enters the realm of geology in the form of marine muds is known to some extent. He adds:

"Chromatographic laws are helpful in tracing their movement beyond this point, and help to pinpoint rocks in which the separated fractions accumulate.

"It can be said that chromatography is a general mechanism uniting the various reactions, and accommodating even seemingly contradictory petroleum-formation hypotheses."

The Fordham researchers believe chromatographic laws may help find stratigraphic traps by tracing the movement of the migrating fluids, and identifying the clues they left behind in the geological column.

Samples for analysis may come from drill cuttings, mud logs, or even outcrops, says Nagy.

To find stratigraphic traps with this new method, he continues, the geologist must prepare cross-sections of the area, list the results of organic analysis, and correlate all chemical and mineralogical data.

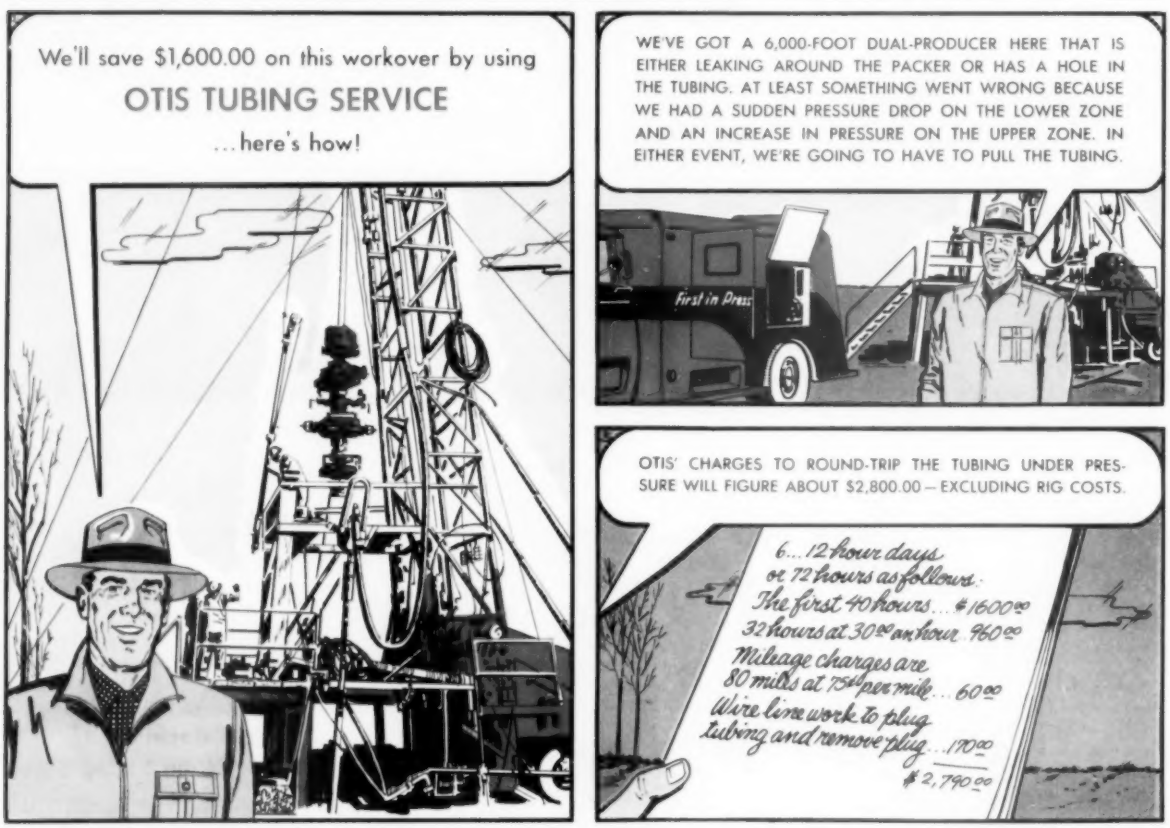
The procedure differs only slightly from the usual geological cross-sections prepared from electric log data, Nagy notes.

The chromatography program at Fordham is but a part of an over-all program aimed at determining the way oil is formed and accumulated.

The scientific name for studies such as these is organic geochemistry. It should be emphasized though, Nagy says, that organic geochemistry is distinctly different from the soil-analysis geochemistry that has been used in the oil industry (PW—Jan.23'59, p25).

This is so because the scope of organic geochemistry is much broader; and it is closely associated with physical chemistry, sedimentary geology, and organic chemistry.

Organic geochemistry, since it tries


We'll save $1,600.00 on this workover by using
OTIS TUBING SERVICE
...here's how!
WE'VE GOT A 6,000-FOOT DUAL-PRODUCER HERE THAT IS EITHER LEAKING AROUND THE PACKER OR HAS A HOLE IN THE TUBING. AT LEAST SOMETHING WENT WRONG BECAUSE WE HAD A SUDDEN PRESSURE DROP ON THE LOWER ZONE AND AN INCREASE IN PRESSURE ON THE UPPER ZONE. IN EITHER EVENT, WE'RE GOING TO HAVE TO PULL THE TUBING.
First in Press
OTIS' CHARGES TO ROUND-TRIP THE TUBING UNDER PRESSURE WILL FIGURE ABOUT $2,800.00 – EXCLUDING RIG COSTS.
6...12 hour days
or 72 hours as follows.
The first 40 hours... $1600.00
32 hours at 30.00 an hour 960.00
Mileage charges are
80 miles at 75¢ per mile... 60.00
Wire line work to plug
tubing and remove plug... 170.00
$2,790.00

to establish the history and path of oil accumulation, can be helpful in petroleum exploration, when combined with geophysics.

Nagy explains this further with a simple analogy:

"Petroleum exploration may be compared to the efforts of locating a box of matches in a strange and dark room.

"First, one may try to find out where the various pieces of furniture are located, and then grope around on them for the matches, since the tables and chairs are likely spots where the matches might have been left.

"This is similar to geophysical exploration, which aims to discover the likely structural sites of petroleum.

"Or one simply may ask the person who left the matches in the room to recount his steps. This is similar to using organic geochemical data for exploration.

"Naturally, the two approaches together, just as in the case of the matches, will be the most effective."

The Fordham research also includes various studies of rock and reservoir properties.

As a part of this program, studies are being conducted to investigate the types of organic compounds present in sedimentary rocks.

Why Not Gasify Tar Sands?

Efforts to tap the potential of the Athabasca tar sands might be better rewarded if gas rather than oil became the primary goal.

This approach was suggested in a letter to the Canadian Petroleum Assn. from Dr. H. H. Suter, a geologist in Calgary for a major oil company.

While not taking any official action, CPA did term the suggestion "a challenging thought."

The Athabasca sands, located in northeast Alberta, have long tempted oil men because of the large estimated potential oil reserves.

But recovery of oil from the tar-like sands has been stymied by lack of an economical method of separating the oil.

Gasification of the tar sands—in the same way that coal is gasified—is suggested as an economical means of recovery of their energy potential.

Dr. Suter suggests that, rather than try to devise a way to separate the oil from the sand economically, oil men should reverse their thinking and apply the known successful methods of coal gasification to the tar sands.

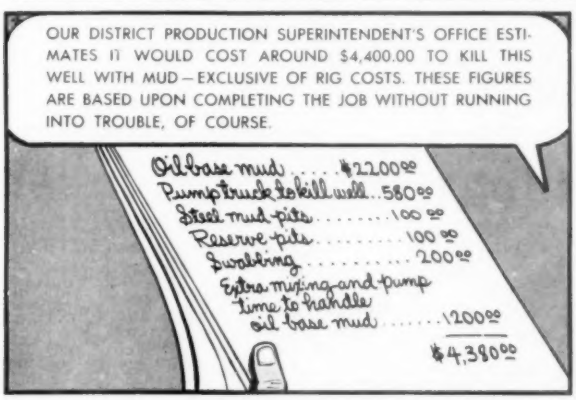
Coal gasification (partial combustion of the coal deposits) has been successfully tried in the United States, but only in pilot operations. The high costs have kept the product from being competitive with natural gas, thus limiting its use. Coal gasification on a commercial scale, however, is under way in other countries.

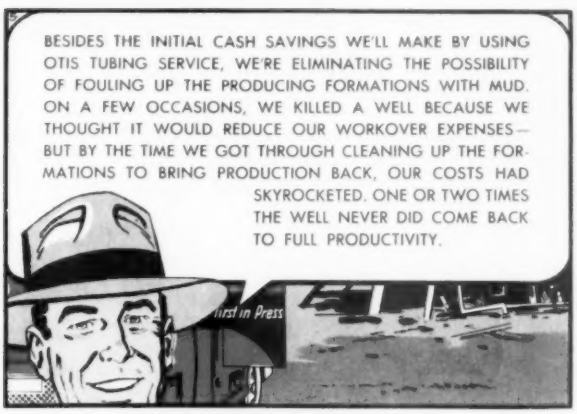
Estimates of the gas potential of the sands vary widely—just as do the oil-reserves estimates—but could reach as high as 3,600-trillion cu. ft., according to CPA.

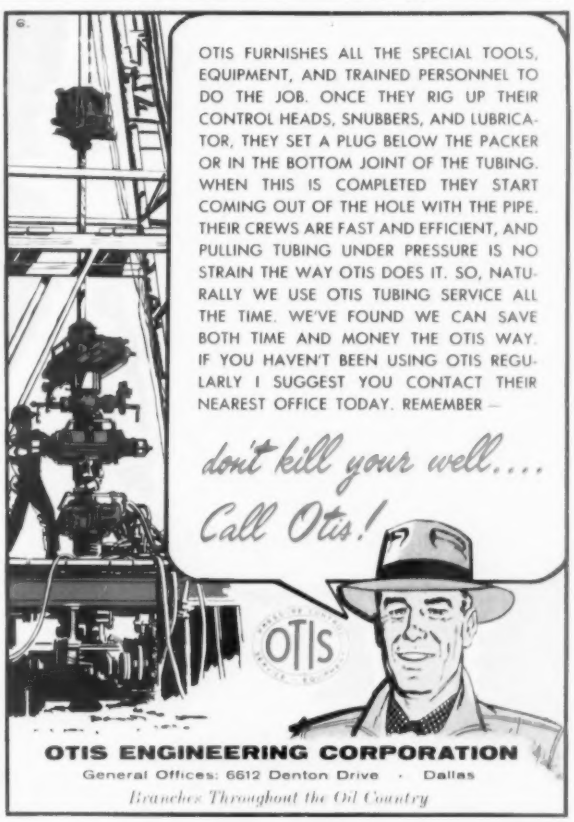
Oil reserves estimates in the Athabasca region have ranged from 200-billion to 600-billion bbl.

Using a conversion factor of 1 bbl. of oil to 6,000 cu. ft. of natural gas (the usual factor is 1 bbl. to 7,000 cu. ft.) gives a potential gas supply for the tar sands of between 1,200-trillion and 3,600-trillion cu. ft.

CPA says that, even using the "modest conversion factor" of 1 bbl. of Athabasca oil to 6,000 cu. ft. of gas, the sands represent a gas supply for Canada for as much as the next 2,700 years, taking into account the projected domestic Canadian demand, plus exports presently authorized or applied for.


OUR DISTRICT PRODUCTION SUPERINTENDENT'S OFFICE ESTIMATES IT WOULD COST AROUND $4,400.00 TO KILL THIS WELL WITH MUD—EXCLUSIVE OF RIG COSTS. THESE FIGURES ARE BASED UPON COMPLETING THE JOB WITHOUT RUNNING INTO TROUBLE, OF COURSE.
Oil base mud $2200.00
Pump truck to kill well .. 580.00
Steel mud pits 100.00
Reserve pits 100.00
Swabbing 200.00
Extra mixing and pump time to handle oil base mud 1200.00
$4,380.00


BESIDES THE INITIAL CASH SAVINGS WE'LL MAKE BY USING OTIS TUBING SERVICE, WE'RE ELIMINATING THE POSSIBILITY OF FOULING UP THE PRODUCING FORMATIONS WITH MUD. ON A FEW OCCASIONS, WE KILLED A WELL BECAUSE WE THOUGHT IT WOULD REDUCE OUR WORKOVER EXPENSES—BUT BY THE TIME WE GOT THROUGH CLEANING UP THE FORMATIONS TO BRING PRODUCTION BACK, OUR COSTS HAD SKYROCKETED. ONE OR TWO TIMES THE WELL NEVER DID COME BACK TO FULL PRODUCTIVITY.


OTIS FURNISHES ALL THE SPECIAL TOOLS, EQUIPMENT, AND TRAINED PERSONNEL TO DO THE JOB. ONCE THEY RIG UP THEIR CONTROL HEADS, SNUBBERS, AND LUBRICATOR, THEY SET A PLUG BELOW THE PACKER OR IN THE BOTTOM JOINT OF THE TUBING. WHEN THIS IS COMPLETED THEY START COMING OUT OF THE HOLE WITH THE PIPE. THEIR CREWS ARE FAST AND EFFICIENT, AND PULLING TUBING UNDER PRESSURE IS NO STRAIN THE WAY OTIS DOES IT. SO, NATURALLY WE USE OTIS TUBING SERVICE ALL THE TIME. WE'VE FOUND WE CAN SAVE BOTH TIME AND MONEY THE OTIS WAY. IF YOU HAVEN'T BEEN USING OTIS REGULARLY I SUGGEST YOU CONTACT THEIR NEAREST OFFICE TODAY. REMEMBER—
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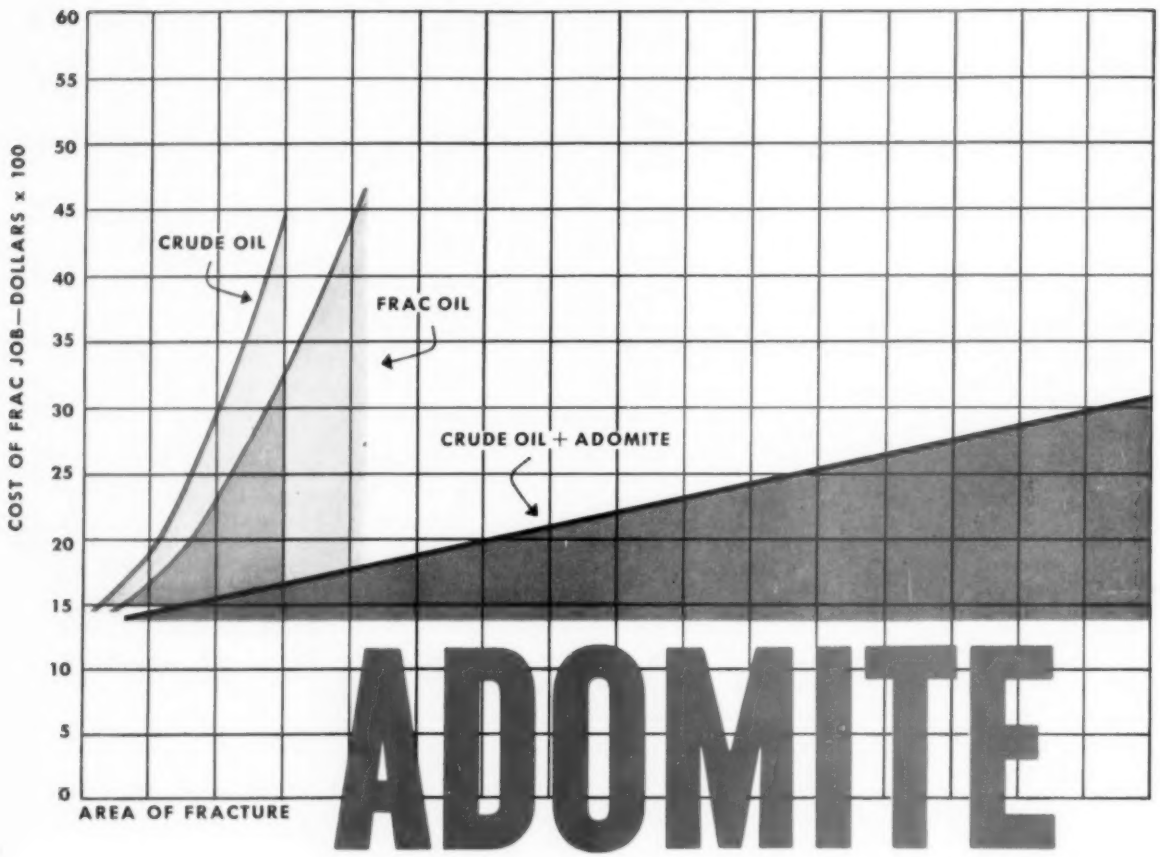

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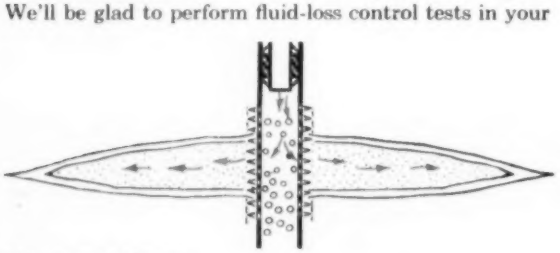

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Computers Will Boost Creative Work

An Atlantic Refining Co. expert spells out the potentials of computers for petroleum engineers.

Automatic, high-speed digital computers will increasingly down-grade the routine work of petroleum engineers and upgrade their creative efforts, according to Paul W. Stade, of Atlantic Refining Co.

The senior reservoir engineer, in the final talk of a weekly lecture series by Atlantic experts, told petroleum engineering students at the University of Texas last week:

"Since the time between creation and application will be shortened, he [the engineer] will be forced to create at a greater rate."

He added that, while the growth in the use of computers has been rapid, businessmen and engineers have only started to develop mass understanding of what the machines can do, and how they can be used.

He noted that the first truly automatic computers for commercial use appeared in 1951. Now, he continued, there are an estimated 2,000 in use, in all industries.

Because of the importance of data input and output, the programmer must concern himself with organizing his basic data so that it can be efficiently transcribed by input machines, Stade noted.

This points to mechanization of data-handling from first inception of the data itself, Stade said. In the oil business, for instance, it might involve automatic recording of oil and gas production data in the field, with no further human handling until the desired final report is prepared.

As for data output, Stade continued, "it would be foolish to have the results copied or rearranged by humans, where errors could result, if we can avoid it. We want machines to do the final arranging of data, and the printing of the final report."

Stade noted that the size and speed of a data-processing system can vary considerably, as can the cost.

A small-size system will usually be in the $100,000 price range; medium-size will range from $100,000 to $700,000; and the large size will cost over $700,000, Stade reported.

Problems handled by the computer can be broken down into data handling or technical categories, the Atlantic engineer said.

In determining what jobs a computer can perform satisfactorily, Stade added, three general factors can be considered: (1) reduction in clerical costs; (2) development of better management control information, or performance of technical calculations too costly or impractical to obtain by conventional methods; and (3) introduction of new techniques.

Reduction in clerical work means that the engineer can spend less time waiting to have his calculations performed by hand, and more time in analyzing the results and advising management.

It is in the area of developing information not otherwise possible that the true potential of the computer can be realized, Stade said. All of this, however, places much greater demands on the engineer. "Since he has better tools and techniques available," Stade said, "he must seek to understand more of the 'why' of his work."

The third category also calls for more creative thinking on the part of the engineer or programmer, he said. If the engineer hits upon a new thought or idea, and if he can express it by a formula, no matter how complicated, he has the potential available to develop it into a practical result.

Though there are some limitations as to the type of work that can be done with a computer, and where, Stade believes that many or all of these will be eliminated.

"With the tremendous ability of the computer to perform calculations with more accuracy and detail, we need to develop better analysis methods," Stade said.

Another problem is communications and organization. Stade explained that many oil companies have computers installed in a central office, miles away from field engineers.

"In many respects, this problem can be solved merely by an engineer's determination that he wants to use the computer," Stade said.

Stade added that much also remains to be done in streamlining the handling of information in the field.

Growing use of computers will result in many significant changes in the way petroleum engineers operate, Stade predicted. He summarized these changes this way:

- The engineer will have to gain an understanding of what computers can do and how to use them.
- He will have to develop more scientific and complete methods for solving his problems.
- He will spend more time developing new concepts and approaches to his problems, and the computer programs for applying them.
- He will be able to provide better answers quicker—answers which can be applied more immediately to day-to-day operations.
- He will have available a greatly increased amount of usable basic data. He will spend less time handling or comparing these data, and more time in deciding their significance and how to analyze them with the computer.
- He will need to know more about the place of his work in the over-all picture of the business he is a part of.

Gulf Winds Power Safety Devices

The feasibility of harnessing Gulf of Mexico winds as power for safety devices on offshore platforms is being evaluated by the CATC group.

The group (Continental, Atlantic, Tidewater, and Cities Service) presently is using a three-bladed, hollow steel propeller, 33 ft. in diameter, mounted on a 40-ft. high platform made of 10-in. pipe, to catch the wind.

So far, the device seems capable of delivering about 2,500 watts about 95% of the time for powering such devices as foghorns and navigational lights.

It develops about 6 kw. with a 16-mph. wind.

The power also could be used as energy for remote-control microwave production equipment.

To provide continuous power, a standby auxiliary diesel engine and generator start operating when the wind becomes too feeble to turn the propeller.

On the other hand, when the winds increase beyond safe operating velocity, the propeller automatically "feathers" itself and stops operating.

The installation is being tested in Block 47-A, Grand Isle.

What's New / IN EXPLORATION, DRILLING, PRODUCTION

Tar Sands Atom Plans To Get New Study

Officials of Richfield Oil Corp. (L. A.) met this week with the Canadian Cabinet in Ottawa to discuss possible use of a nuclear explosion to free oil from the Athabasca tar sands.

The meeting, which started Monday, dealt with the setting up of a joint committee to study the idea. The committee will consist of representatives of the Canadian Government, the U.S. Atomic Energy Commission, and Richfield.

Richfield, which holds 2-million acres in the Athabasca area in northeastern Alberta, has been studying for two years the use of heat released by a nuclear explosion to free oil from the sands.

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Mississippi Keeps 40-320

Mississippi's Oil & Gas Board last week unanimously rejected proposals for wider spacing of oil and gas wells going below 10,000 ft.

Mississippi spacing is 40 acres for oil wells and 320 for gas wells. In two deep producing zones, however, in Grinville and Loring gas fields, wider spacing is allowed under special field rules.

Board chairman James McClure said all operators have adequate remedy to secure wider spacing under special field rules if they can prove wider spacing is essential to maximum recovery.

The board's decision was made without any detailed testimony by opponents of the spacing change. Royalty owners, lease holders, landowners, and city and county officials all opposed wide spacing.

Most of the majors and leading independents operating in the state supported a proposal for 80- and 640-acre spacing, contending that present spacing causes overdrilling.

•

Leasing News

The Alberta provincial government received a total of $8,355,328 for oil and gas rights at two mid-January sales.

At the Jan. 15 sale, oil and gas rights involving 399,515 acres in proven and unproven areas brought $7,810,792. Offered as leases were 30,865 acres. The remaining acreage sold comprised reservations in Crow, Indian Lake, and Marten Hills provincial reserves. Atlantic Refining Co. paid $1,078,011 for a 640-acre lease in the Virginia Hills area.

At the Jan. 20 sale, natural gas rights in crown reserves covering 171,840 acres scattered through the province brought $544,536. As the biggest buyers, Colorado Oil & Gas, Ltd., and Imperial Oil Ltd. paid $185,266 for natural gas rights licenses covering 40,000 acres near Sturgeon Lake oil field, in northern Alberta.

Sun Oil Co. was high bidder at the Jan. 15 sale of Fort Berthold Indian reservation leases in North Dakota.

Sun's bid was $288.01 per acre for a 320-acre tract offsetting production at Antelope-Sanish field, McKenzie County.

Out of 44 tracts offered, 13 tracts (3,520 acres) were leased. Average per-acre bid was $35.40. Other successful bidders were Gulf Oil Corp., Skelly Oil Co., Pan American Petroleum Corp., and Tom Theilen, Jr.

More than 51,950 acres of Colorado state land will be up for lease at the regular monthly sale Feb. 4.

The offering is divided into 121 tracts, and includes 18,600 acres in Saguache County (San Luis Valley), and Conejos and Rio Grande Counties.

Of the rest 10,400 acres are in Phillips County, in northeast Colorado, and more than 10,240 acres are in Yuma County, on the east side of the Denver-Julesburg Basin. Also included are 2,640 acres in Logan County.

•

Oil and gas leases on 10,885 acres of Federal land in Niobrara and Weston Counties, Wyo., will be up for sale Mar. 5.

The bureau of Land Management has divided the land into 90 parcels, with separate bids to be submitted on each.

The land is in Mush Creek-Skull Creek, Southeast Skull-Creek, and Clarcton fields.

•

Pyramid Oil & Gas Corp., Dallas, and William S. Price, Oklahoma City, have leased 60,000 acres of ranch land in northeastern Union County, N. M.

Robert R. Wheeler, Pyramid manager, said a seismic exploration program is planned, which will be followed by three 4,500-ft. pre-Cambrian tests.

The land is in sections 30n-34e, 30n-35e, and 27n-35e.

•

The CATC group may soon wind up with more wells producing from its fire-hit platform than before the blaze began (PW—Dec.5'58,p27).

Work is well under way to restore production from the original wells feeding into the "E" platform, Block 45, West Delta Area.

There were 19 "wells" flowing into the platform, counting multiples in each hole as separate wells—three duals, three triples, and one quadruple.

At this point, however, it is not certain how many of these will be brought back into production immediately.

Meanwhile, work is going ahead on completion of the three directional holes that were drilled as part of the fire-extinguishing program.

One already has been completed as a triple. One of the others is expected to be completed as a quadruple, and the other as a triple.

This would bring the platform total to 29, providing all of the earlier zones are restored to production.

•

Engineering

A new rotary drilling hose, said to be the most flexible ever designed for deep drilling, has been developed by B. F. Goodrich Industrial Products Co., Akron, Ohio.

Clyde O. DeLong, president, says more than 2 mi. of cable, made of 41 mi. of high-tensile-strength wire, are spiraled inside every 60-ft. length of the new hose.

•

A full-opening casing head for 2,000-psi. working pressure has been announced by National Supply Co.

The National Type G Casing Head includes a demountable flange, and employs easily-installed, pressure-actu-

ated packing which assures a positive seal without the need for precise manual adjustments, the company reports. The body accepts slips and packing units interchangeably for various sizes of inner strings.

•

ALCO Products, Inc., has announced introduction of a new dual tubing hanger that provides a full area opening for tool passage and independent movement of either string of tubing.

The DX-2521 hanger is being manufactured in the company's Beaumont (Tex.) plant. A modified form of the hanger also is available threaded to receive the new ALCO back-pressure valve.

•

A new type of gas-burning heater for "gun barrel" treaters and heater-treaters has been developed by Space Corp., of Garland and Dallas, Tex.

The new heater will supply constantly controlled heat within a four-degree tolerance at any preset temperature, the company says. It also operates at very low gas pressure, the company adds, and is so designed that the flame is sealed inside the fire chamber.

The heater is designed for complete submersion, except for the ends of the exhaust and intake stacks. Heat transfer is said to be very high, with fuel consumption proportionately lowered.

•

A new hydraulic-power tubing tong that permits quick, easy changes of jaw sizes is being produced by Hillman-Kelley, of Los Angeles.

The tongs have a six-contact-point jaw design, which ratios gripping action to the torque required. The company says the new jaws will "positively" not crush API tubing and that they minimize die cutting or gouging of new high-strength tubing.

•

What is said to be the largest cementing unit ever mounted on a truck has been placed in operation by Ajax Service Co. of Venezuela.

Ideco, Inc., one of the Dresser Industries, designed and built the unit. Ideco says it is unique in that the entire assembly is skid-mounted on the truck chassis to permit easy removal and transfer to a different truck without necessity of reinforcing its frame.

Two Cummins 335-hp. diesel engines power two Oilwell 48P-HD triplex pumps, rated up to 12,000 psi. working pressure. The pumps are mounted laterally over the tandem rear axles.

•

Drilling Highlights

West Texas—Phillips Petroleum Co. No. 1-EE University, section 7, block 23, University lands survey, Pecos County, flowed 536,000 cf/d of gas on test through ¾-in. choke and perforations at 8,650-85 ft. in the Wolfcamp. During a five-hour period, it also produced 1½ bbl. of distillate. Present plugged back depth is 8,740 ft. at the wildcat, world's deepest test, which was drilled to 25,340 ft. The deeper horizons have proved negative or noncommercial.

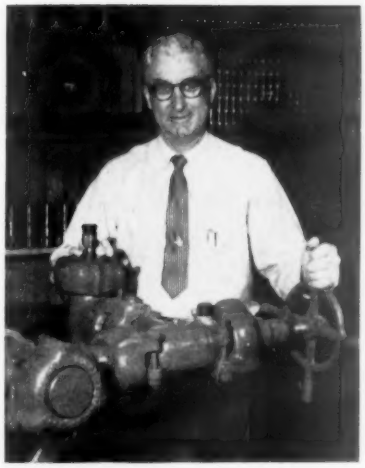
British Columbia—Pan American Petroleum Corp. No. 1-A Beaver River, 3 mi. south of the Yukon-British Columbia border, which blew out at 8,250 ft., has been brought under control. Two crew members were killed by the explosion and resulting fire Jan. 11. A Pan Am spokesman said gas flow appears to be of commercial volume, but thickness and extent of the gas-bearing formation is unknown. The wildcat is 100 mi. north of gas production in the Ft. Nelson area.

North Texas—Artex Oil Co. No. 1 Stovall, section 2925, TE&L survey, Young County, was completed as a Bend conglomerate discovery, flowing 112 b/d of 32-gravity oil through 18/64-in. choke and perforations at 4,142-54 ft. The well is 2½ mi. southwest of Stovall McLester pool.

Texas Panhandle—R. L. Force and Apache Oil Corp. No. 1 M. Hancock, section 53, block 4 GH&H survey, Ochiltree County, flowed 170 b/d of 40-gravity oil through ½-in. choke and perforations at 7,558-66 ft. in the upper Morrow. The discovery is 2½ mi. east of Twin DeMoines field.

Kansas—R. G. Lawton No. 1 Rueb, section 13-3s-42w, Cheyenne County, swabbed 16 bbl. of oil per hour through perforations at 4,537-42 ft. in the Lansing-Kansas City. The discovery, put on pump, is the third pool opener in the far northwest corner of Kansas since the Llanos strike.

Northeast Louisiana—Jett Drilling Co., Inc., No. 1-B Louisiana Central Minerals, section 2-10n-5e, Catahoula Parish, was completed as the discovery for Enterprise field, flowing 161 b/d of 41.5-gravity oil through 11/16-in. choke and perforations at 7,806-13 ft. in the Tuscaloosa. The discovery is 10 mi. northwest of Harrisonburg field.



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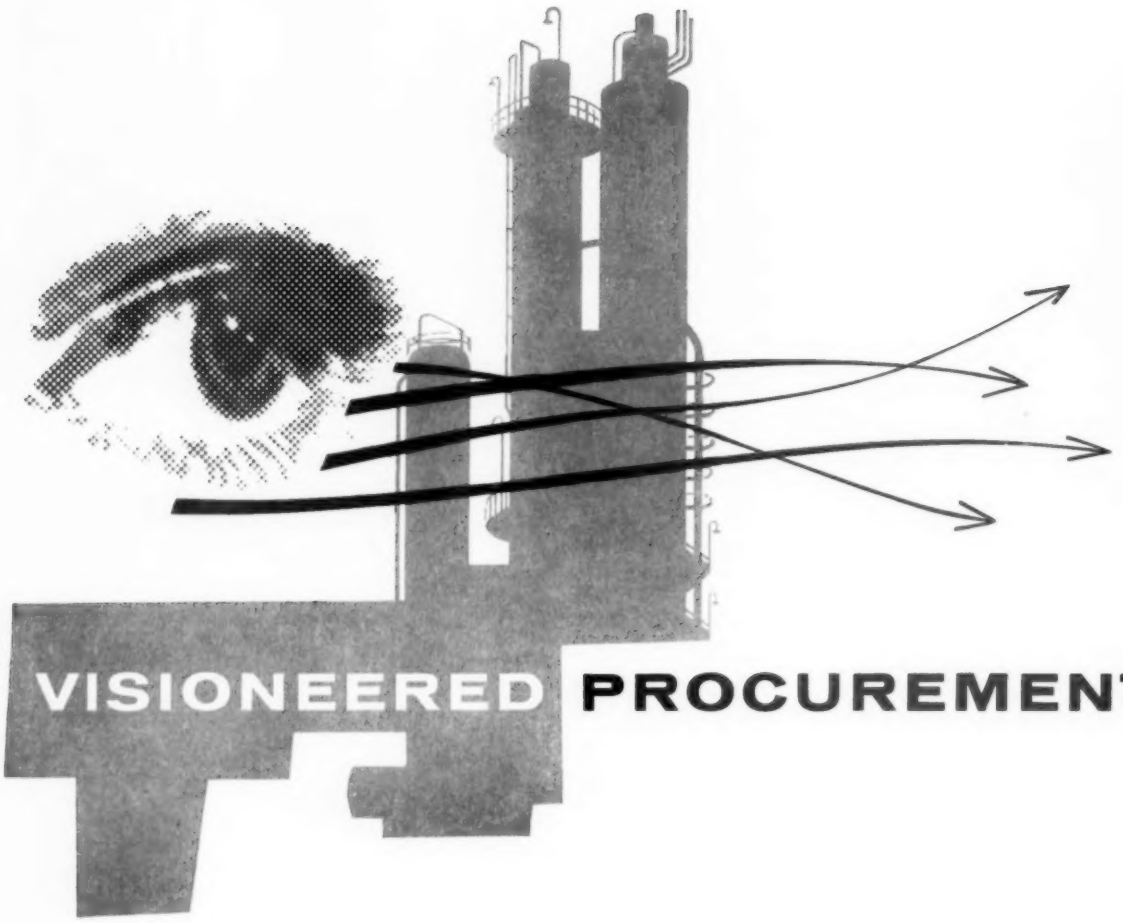

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Refiners' 'Schools' Are Paying Off

New mechanic training programs are now:

1. Saving dollars in maintenance costs
2. Providing specialists and "broad-ability" men
3. Uncovering supervisory potential
4. Attracting better job applicants
5. Generating plant-wide interest in training

Refinery maintenance is no longer a job for the unskilled. "The day of the self-made mechanic is past," says Al Guerard, chief engineer of the Richmond (Calif.) refinery of Standard Oil Co. of California, Western Operations, Inc. "We must have comprehensive, formal training programs."

A growing number of refining companies across the country have come to feel the same way about the newer, more-formal training they are now offering their refinery maintenance workers.

California Standard now has a model comprehensive maintenance-training program for its Richmond refinery workers, who are bent on learning all they can as fast as they can.

The Richmond plant, like most refineries, has provided its workers with training opportunities of various sorts for many years. At Richmond, training programs go back about 20 years.

But in 1955, California Standard's large postwar construction program had put more capacity and more complex equipment into the Richmond plant. Suddenly, the refinery began to need more and more skilled maintenance craftsmen.

Plant management was at a crossroads: It could either contract maintenance to the specialist companies then beginning to sprout up for just such work; or it could keep maintenance in the Socal family by developing a slick and sharp maintenance crew of its own—a staff of maintenance specialists.

The company set to work on the latter course and came up with a program combining stepped-up on-the-job training and organized-curriculum classroom work.

The program at Richmond is designed to fit a trainee directly to the special skills he'll be required to handle in the refinery.

It's tailored to produce specialists in nine refinery crafts: machinists, boilermaker-welders, pipefitters, electricians, in-

ON THE JOB and in classrooms, trainees are learning how to work with today's complex refinery equipment.

strument mechanics, riggers, carpenters, tinners, and welders.

The course is very thorough—it takes three years to complete. A trainee, after passing painstaking selection tests, spends his training time this way:

For about two-thirds of each year, the trainee spends 36 hours a week in "work-situation" training, and four hours a week in the classroom. During the remainder of each year, he continues "on-the-job" training by filling in for vacationers.

All trainees get classroom instruction in shop mathematics, trade theory, blueprint reading, metallurgy, physics, and craft theory. Subjects pertaining to each specific craft are also taught.

Classroom instructors are carefully chosen members of the company's engineering division. These teachers often give on-the-job training instruction as well, although foremen are also largely responsible for this kind of training.

Curriculum outlines were generally shaped by first asking shop foremen what apprentices need to know, and then asking the man considered best qualified—a head mechanic, foreman, or specialist—to develop a course outline. Each course took about six weeks to develop.

Classroom sessions are designed to have trainees "see and feel and take part; have discussions; and work out problems on the board," according to Phil Brubaker, the 20-year Socal veteran who developed the program.

As a result, the science and craft theory classes draw heavily on visual aids—films, cutaway models, wiring setups, and boards holding sample parts, gaskets, pipes, and types of packing. For demonstration of large equipment, classes go into the refinery's shops, or out into the yards.

Although the Richmond program has just produced its first crop of graduates, California Standard is already savoring some happy results.

The program's first "class" graduated last May, and has already made itself felt in the plant's maintenance operation. Future classes—about 60 men will graduate every year—are expected to fit in just as well.

Company officials feel sure that when a worker has completed the training program, he's as well-equipped as he can be to handle his job.

Chief engineer Guerard says there is "no question but what the new graduates are far better trained, far better equipped" than graduates of previous training courses.

This increased personnel efficiency can mean dollar savings in the maintenance operation. More knowhow means less waste in time, effort, and equipment.

The program has also uncovered a good source of potential supervisory personnel.

The majority of the apprentices, especially in the more highly skilled crafts, have the intelligence and natural mechanical ability to supervise work.

Guerard, speaking of the current crop of apprentices, says, "If they continue to improve themselves, continue to develop, most of them can be considered as prospective supervisory material."

And California Standard has found that the simple fact that the training program exists attracts better job applicants for work at the Richmond plant.

The company has found that the news of the increased training opportunity has been spread considerably by word of mouth in the Richmond area (the company has done no formal recruiting for the training program). Result: more ambitious and capable men are applying for jobs at the Richmond refinery.

The Richmond training program has also created a general "hunger for learning" throughout the plant's maintenance force. The "urge to learn" is now widespread among the plant's 1,150 maintenance employees.

For one thing, the program has been designed not only to make journeymen craftsmen out of apprentices, but also to enable and encourage these "graduates" to continue studying on their own.

Brubaker suggests that giving a man a foundation in certain subjects, say physics and math, can create the spark that will keep him studying, and increase his value to the company. This seems to be happening at the Richmond plant.

Also, the training program has awakened older and more experienced workers at Richmond to the value of new learning. Soon after the training program got rolling, veteran mechanics began to push for refresher courses to bring some of their skills up to the level of the trainees. Says Guerard: "The older men see that the apprentices are getting better training, and they want to learn the new techniques, too."

As a result, California Standard—now aware that today's more complex refinery equipment requires more efficient veterans as well as well-trained younger workers—is now starting to develop a review and training course for its journeymen craftsmen.

Socony Uses One Console Control for Five Lube-Test Engines

This is the new diesel engine test laboratory at Socony Mobil Oil Co.'s Paulsboro (N.J.) research and development center, where Socony is now measuring quality and performance of a variety of experimental lubricating products. The new lab brings together five single-cylinder diesel engines formerly located at different stations, for more coordinated testing of the lube products.

The 20-ft.-long console in the foreground makes it possible for a single technician to control the newly integrated operation.

E. A. Martin, supervisor of the research center's automotive section, says the new system makes for "more accurate information—and happier operators and mechanics."

What's New / IN PROCESSING AND PETROCHEMICALS

Union Oil Co. of California has purchased 1,100 acres of land on the Tulalip Indian Reservation, west of Marysville, Wash., as part of a site for a proposed refinery. Marysville is 35 mi. southeast of Anacortes, site of Shell's Washington refinery.

The purchases, in a public auction conducted by the U.S. Bureau of Indian Affairs, cost Union $145,482. Observers believe this latest acquisition completes Union's land requirements for the refinery, except for a few small tracts. The company previously had purchased 600 acres on the reservation, also at auction, and several other pieces in private transactions.

Union is the third major oil company to purchase land in this area for a refinery site. Richfield Oil Corp. has considerable property north of the Union site, while Standard Oil Co. of California has a large tract of land southwest of Everett, near Mukilteo.

•

"A basic break-through" in the study of lube-oil compositions is claimed by Gulf Oil Corp. scientists.

The method encompasses new techniques in the application of the mass spectrometer for identification of molecule types in lube oils.

Gulf scientists anticipate new and useful information on how the molecular make-up of lube oils relates to their performance. Molecular make-up determines the qualities of oil, such as viscosity, pour point, resistance to oxidation, and others. But hitherto, they say, this make-up has defied analysis in the vast majority of cases.

•

Coastal Products Co., a newly formed company jointly owned by Sunray Mid-Continent Oil Co. and Suntide Refining Co., has plans for a delayed coking plant at Corpus Christi, Tex.

The new coker will handle 7,000 b/d of feedstock, and will cost an estimated $3-million. It will be built on land leased from Suntide at that company's Corpus Christi refinery, and will be operated by Suntide.

Construction will start around Apr. 1, with completion scheduled before the end of the year. Coke will be sold to an outside firm for the production of graphite electrodes. Other coker products will be used by Suntide in the manufacture of petroleum products.

•

A gas processing and desulfurization plant will be built by the producers in the Nevis gas field of southeastern Alberta.

The plant, to process 40-million cu. ft. of gas daily, will cost $3-million. Fluor Corp., Ltd., has the construction contract, and is scheduled to start work on the plant before summer.

Among the owners of the plant are Standard Oil Co. of California, Home Oil Co., Tennessee Gas Transmission Co., Pan American Petroleum Corp., New Superior Oils of Canada, Ltd., and Canadian Superior Oil of California, Ltd.

The plant operator has not been designated yet. Pipeline gas from the plant will be delivered by the Alberta Gas Trunkline to the Trans-Canada pipeline system.

•

General Petroleum Corp. is planning a delayed coker at its Torrance (Calif.) refinery as a result of the Los Angeles ban on burning high-sulfur fuel oils during the smog season.

The capacity of the unit will be 9,300 b/d. This will bring the refinery's total coking capacity up to 35,000 b/d. Bids have gone out for the unit, with answers reportedly expected in March.

•

Gulf Oil Corp. has increased its participation in Callery Chemical Co., Callery (Pa.) makers of high-energy boron fuels.

Gulf has boosted its interest from 25% to 50%, a provision allowed for in the original agreement Gulf had with Callery's parent, Mine Safety Appliances Co.

Callery operates plants making high-energy jet aircraft and missiles fuels in Lawrence, Kan., and Muskogee, Okla.

•

Increased interest in new plant facilities and major modernization programs has developed during the past several months in the U.S.

"There has been a pick-up in sales activity in both the talking and the contract-signing stages," according to Carl B. Whyte, president of the National Constructors Assn., speaking to members at a recent New York City meeting.

This pick-up will be reflected in increased engineering activity during the early part of the year. It will take longer to make itself felt in actual construction work because of the normal time lag between engineering and construction in the industrial field, Whyte said.

NCA represents 26 major, nationally operating engineers of chemical plants, petroleum refineries, power plants, steel mills, and other manufacturing facilities.

Atom Unit On Stream

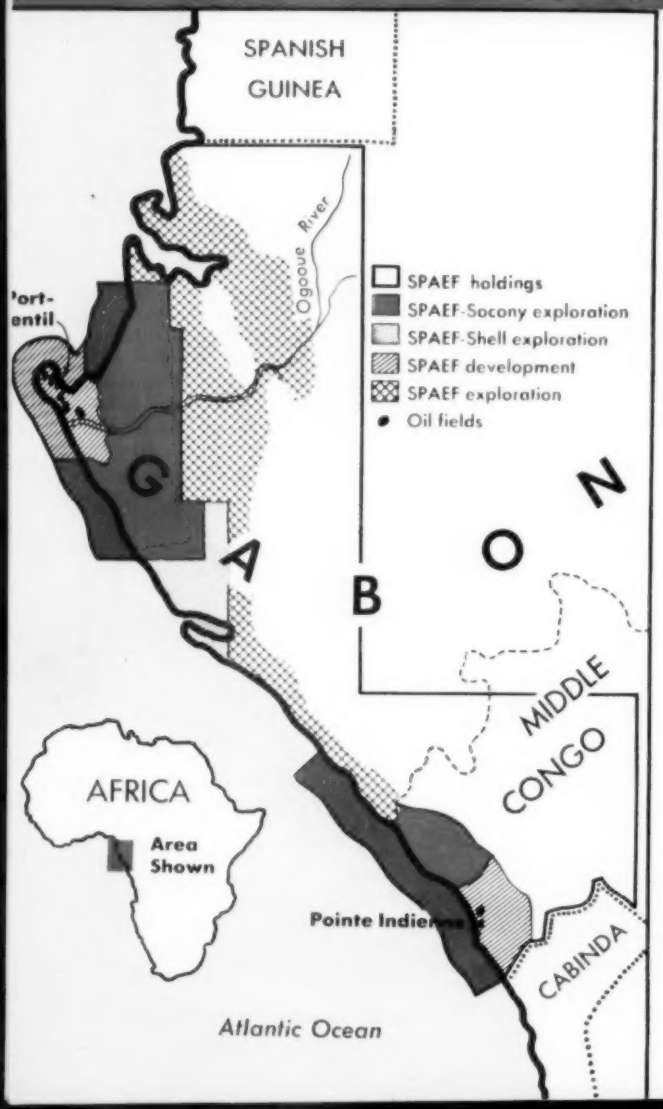
The world's largest privately owned and operated nuclear reactor has been started up by Industrial Reactor Laboratories, Inc., near Plainsboro, N.J. The reactor is housed in an 87-ft.-high, aluminum-sheathed "beehive" of reinforced concrete. Cost of the reactor and its supporting laboratories was $4.5-million.

The reactor, a "swimming pool" type, will be raised gradually to its full power potential of 5-million watts, the level at which it will be sustained for research operations.

Socony-Mobil Oil Co. is one of the ten equal joint owners of Industrial Reactor Laboratories. The others are: U.S. Rubber Co., National Distillers & Chemical Corp., Atlas Powder Co., American Machine & Foundry Co., American Tobacco Co., Continental Can Co., Corning Glass Works, National Lead Co., and Radio Corp. of America.

● Socony and Shell this year will help spread the search for more oil in French Equatorial Africa, where the French operator has invested $83-million in the past ten years. Gulf and Socal may come in later. Prospects look good for new discoveries. The oil fields found so far are shallow and close to the coast, presenting no transport problems.

Gabon Oil Prospects are Numerous—



PARIS—American oil capital is adding a new dimension this year to French development of Gabon oil, the first from any French African territory to make a competitive appearance in world markets (PW—Dec.19'58, p52).

Production from the territory in French Equatorial Africa first started flowing to France in 1957. The initial discoveries were established in 1956 by Soc. des Petroles d'Afrique Equatoriale Francaise (SPAEF), a company controlled by the French government's Bureau de Recherches des Petroles.

By the end of 1958, SPAEF had tripled its production, and though the year's average was only 10,100 b/d, the crude was already being offered in the Western Hemisphere.

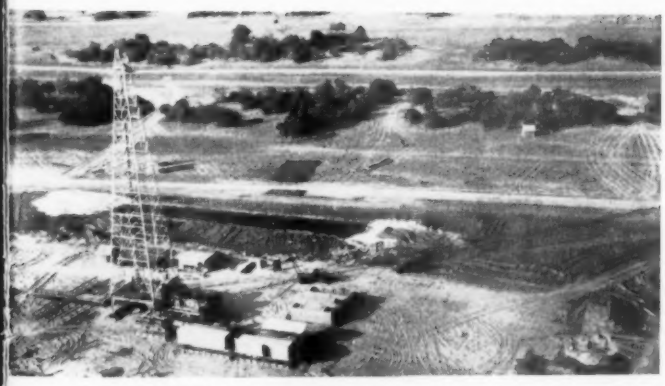
By then, the company's ten-year search for commercial oil had cost some $83-million—most of it coming directly from the French government's coffers.

As a result, SPAEF concluded two preliminary 50-50 joint venture agreements for further exploration and development of parts of its acreage with Socony and Shell (PW—Oct.10'58,p47). Final agreements are now being worked out.

Negotiations for further injections of U.S. oil capital will be resumed later this year—first with Gulf Oil, then with Standard of California—after the final rubber-stamping of SPAEF's two joint-venture pacts with Socony and Shell.

SPAEF's holdings encompass the entire sedimentary basin of Gabon, plus acreage in what was until recently the Middle Congo, another territory of French Equatorial Africa (map). (It is now a Republic in the French community, known simply as "Congo.")

SPAEF's joint venture pact with Socony affiliates covers two tracts totaling 9,700 sq. mi. These include adjoining offshore areas on which Socony will be the operator. The larger tract surrounds the proved producing area on the Atlantic Coast around Port-Gentil, which SPAEF is developing for its own account. The other includes acreage



WILDCAT drilled with Ideco Super 7-11 rig found gas at Tchengue, in Gabon's delta area, where present oil fields are clustered.

But They're Small

in the Congo surrounding a promising discovery there.

The pact with Shell covers one 1,544-sq. mi. onshore tract in Gabon.

Gulf and Socal will probably be offered interests in a long strip running the length of Gabon.

One operational uncertainty was ended last year by SPAEF's conclusion of 25-year tax conventions with the local governments of French Equatorial Africa.

As in all other French African territories except the Sahara (which has a new 50-50 oil law of its own), there's only a skeleton of French regulations governing oil operations, while taxes and royalties are fixed by the local authorities.

Under the new conventions, SPAEF will pay the local governments 12% of annual gross profits, including royalties, and turnover and acreage taxes. The oil royalty is scaled from 1% on production of 1,000 to 2,000 b/d to 9% on production over 20,000 b/d. For gas, the royalty is 5% for production over 10½-billion cu. ft. annually.

A brisk, $18.2-million drilling and exploration program is planned for this year. Part of the cost will be covered by sales of crude by SPAEF; the rest by participation of Socony and Shell, who will share costs equally with SPAEF on their respective agreement areas.

Last year SPAEF drilled 445,500 ft.—almost double its 1957 footage of 280,800 ft. The total included 25 wildcats in Gabon and one in the Congo, plus 60 development wells in Gabon and eight in the Congo.

This year SPAEF will keep eight rigs operating, including four that are already at work on the Socony joint-venture acreage.

The year's program also includes offshore seismic work that Socony is already starting, and gravimetric work on the Shell joint-venture acreage.

Prospects of new discoveries look good, though the pools may be relatively small, like those tapped so far.

SPAEF has encountered shows in several of the wildcats it has drilled in both the Congo and Gabon, where there are numerous potentially oil-bearing salt domes, generally shallow.

In the Congo, for instance, SPAEF has discovered oil at Pointe-Indienne, 15 mi. north of Pointe-Noire. Drilling is now under way to outline the field, where nine wells have been drilled so far. The oil is 36.5-gravity.

And in Gabon, SPAEF last year tapped another small pool at Alewana, southeast of Port-Gentil. Only one well out of the four drilled there so far is productive, with output of 120 b/d from a depth of 2,887 ft. in the cap rock. The well produced a total 40,000 bbl. of oil last year.

The fifth field in the proved area of Gabon between Port-Gentil and Ozouri, will go into production early this year at Animba.

Smaller than SPAEF's four present producing fields, Animba was discovered in April, 1957, 4 mi. north of Ozouri. It now has four productive wells out of a total of 13 drilled. They will all produce from shallow depths, ranging from 1,673 ft. to 1,837 ft. in silicified clay of Eocene age. One of them, now in production, is averaging 150 b/d.

SPAEF expects to boost its output to at least 13,500 b/d this year. It currently estimates reserves of its Gabon fields at 63-million bbl., including 10.5-million bbl. at Ozouri and 17.5-million each at Pointe Clairette and M'Bega.

Here's how SPAEF's four present producing fields look at this stage:

• **Pointe Clairette, near Port-Gentil, has 39 producing wells** out of 49 drilled since it was discovered in July, 1956.

Output last year averaged about 3,800 b/d. Per-well output ranges from 120 b/d to 540 b/d from two producing zones in Senonian (Upper Cretaceous) sands at depths ranging from 3,609 ft. to 5,839 ft.

The crude is 32-gravity, with 0.63% sulfur content, and is reported to give good yields of gasoline, kerosine, and high-grade gas oils, as well as residual fuels.

• **M'Bega, 12½ mi. south of Port-Gentil, has 19 producing wells** out of a total of 32 drilled.

The field, discovered in September, 1957, averaged 3,340 b/d last year. Per-well output ranges from 180 b/d to 1,200 b/d, from two producing zones in silicified clays of Eocene age, at depths from 2,510 ft. to 3,757 ft. The crude is 27-gravity and is described by SPAEF as closer to Pointe Clairette crude than to that at Ozouri.

• **Ozouri, 20 mi. southeast of Port-Gentil, now has 11 producing wells** out of a total of 17 drilled since its discovery in early 1956.

Its production was slowed down slightly last year to some 2,700 b/d, to prolong the life of the field. Per-well output ranges from 210 b/d to 810 b/d, from silicified clays of Eocene age, at depths from 2,024 ft. to 2,251 ft.

The oil is 20-gravity viscous naphthenic crude, said to compare favorably with Venezuelan Lagunillas and some Texas crudes.

• **The Cap Lopez field, discovered last year north of Port-Gentil, has four productive wells** out of six that have been drilled so far. Productive capacity has not yet been determined.

A series of tests, however, indicate that the wells may average from 150 b/d to 270 b/d at depths ranging from 5,398 ft. to 6,103 ft. in Senonian (Upper Cretaceous) sands. A total of 70,300 bbl. of 32.5-gravity crude was produced at the field last year.

Brazil Defends Bolivia Oil Pacts

SAO PAULO—Three groups of U.S. companies appear set to participate in Brazilian oil ventures in Bolivia, under tentative deals to provide financial and technical backing (PW—Jan.9'59,p43).

The agreements were publicly disclosed for the first time by Roberto Campos, head of Brazil's Development Bank, in a week of tumultuous hearings before a Brazilian congressional inquiry committee that is now drawing up a report.

The pacts involve three of the new Brazilian companies formed by Sao Paulo and Rio de Janciro business interests to participate in exploration of the "treaty acreage" in Bolivia that is to be parcelled out by the bank.

The three agreements outlined by the Development Bank basically call for repayment of the risk capital provided by the U.S. groups only if oil is found.

Here are the details disclosed at the hearings:

• **The T.U.L.M. group will put up $9-million to back Petroleo Andino** (Petrolansa), which is controlled by financial and insurance interests headed by Celso Rocha Miranda and Paulo Sampaio.

Rocha Miranda himself emphasized that this $9-million will be repayable only if commercial oil is found. After repayment, profits will be split equally between Petrolansa and the T.U.L.M. group, which consists of Tennessee Gas Transmission, Union Oil & Gas of Louisiana, Lion Oil, and Murphy Corp. The T.U.L.M. group itself is active in Bolivia, on contract acreage of its own.

• **Anderson Clayton, supported by a services contract with Kerr-McGee Oil Industries, will help finance Uniao Brasil Bolivia de Petroleo,** a company formed by the Capuava refinery group.

Under the agreement, Anderson Clayton—a major U.S. import-export firm that is also Brazil's biggest coffee exporter—will supply the Brazilian firm with dollars in exchange for cruzeiros over a five-year period.

• **Pan American Land & Oil Royalty Co., of Dallas, will back Petroleo Brasil Bolivia** (Brabol), formed by the Lidio Lunardelli group of Sao Paulo.

The U.S. firm (not to be confused with Indiana Standard affiliates) is supported by a services contract with DeGolyer & MacNaughton.

The bank's president strongly defended the investment formula provided in the three agreements as offering the most advantages to Brazil, since the bank itself is not in a position to supply the risk capital required.

During the hearings, Campos strongly denied allegations that the bank had acted in collusion with U.S. firms in giving preference to the Brazilian groups that had lined up U.S. financing.

The charges were leveled by one of two other Brazilian groups to which the bank had given only qualified approval to participate in the Bolivian venture.

All proposals, Campos said, had been examined impartially on the basis of reference terms previously approved by Brazil's president, the National Petroleum Council, Petrobras (the state oil monopoly), and other top policy-making organs.

Since a risk investment is involved, Campos said, it had been decided to give preference to those groups that could offer foreign financing—with returns to be based on the success of the ventures, and without direct foreign participation in the administration of the Brazilian companies.

The Development Bank's position on the Bolivian venture seemed likely this week to be maintained unchanged. A long exposition by Campos at the end of the hearings received general approval and was widely commented on, squelching wild rumors of domination by "foreign trusts."

IPC Jells Plans On New Iraq Oil Port

The first contract for Iraq Petroleum Co.'s projected big Persian Gulf offshore island oil terminal will be awarded soon (PW—Sep.19'58,p82).

A $10-million to $11-million contract to build the island platform itself will go to a group of three London companies: Raymond U. K., Ltd.; DeLong Overseas, Ltd.; and Costain, Ltd., under a letter of intent signed last week.

The terminal will be built in deep water about 20 mi. offshore from Khor-al-Amaya, to accommodate giant supertankers that cannot navigate Iraq's shallow-water port of Fao, which now handles all oil exports from the Basrah fields of southern Iraq. Contracts for two planned 32-in. submarine loading lines from Fao to the island have not yet been announced.

Mobile working equipment will do unusual double duty in forming the 1,302-ft.-long oil loading platform of three "islands" with connecting bridges.

The center, 400 x 240 ft., will be of concrete, but the two ends will be formed by operating units that will be used as work platforms first. One will be a 180 x 80-ft. tugboat and heliport, from which the jacks will be removed. The other, an accommodation island, will be a 125 x 80-ft. self-elevating, steel DeLong dock, which will be used for pile driving before it is sealed off.

The terminal is part of IPC's plan to triple the oil export capacity of Iraq's southern fields, which last year produced 228,000 b/d.

1958 Mideast Oil Output Jumps 20%

Every single key Middle East oil producing state hit a new output record last year, jumping the total 20% over 1957, to 4,135,800 b/d.

Qatar's 24% increase was the biggest real percentage gain, though overshadowed by Kuwait's 23% leap to 1.4-million b/d.

Iran's 15% climb was the next-highest real percentage gain last year.

Iraq's 64% leap over 1957 includes full recovery from the late-1956 pipeline sabotage, plus a real gain of 7% over the pre-Suez high set in 1955.

The totals, in 000 b/d:

	Dec. '58	Dec. '57	Nov. '58	Avg. '58	Avg. '57	% Increase
Kuwait	1,442.7	1,276.1	1,506.9	1,401.3	1,143.0	23%
S. Arabia	1,034.6	1,053.3	1,034.2	1,015.0	992.1	2%
Iran	822.0	726.0	806.0	821.0	716.6	15%
Iraq	794.7	625.0	778.5	724.1	442.8	64%
Qatar	188.6	169.1	188.6	174.4	140.2	24%
Totals	**4,282.6**	**3,849.5**	**4,314.2**	**4,135.8**	**3,434.7**	**20%**

What's New / AROUND THE WORLD

VENEZUELA—A new 28-mi., 15,000 b/d pipeline will be completed in April to open a Shell affiliate's remote oil discovery near Colombia (PW—Feb.21'58,p88).

The line will run to an existing pipeline system, from Colon Oil Co.'s CR-4 discovery well at El Rosario, where another well is nearing 13,000 ft. The CR-4 was carried to total depth of 14,680 ft. and shut in last year after testing 40.5-gravity oil at rates up to 4,400 b/d from the Cretaceous.

•

ITALY—Getty Oil Italiana has been set up at Gaeta with $3-million capital. It replaces Golfo Petrolifera, of Milan, the independent refining company in which Getty Oil last year acquired controlling interest (PW—Oct.3'58,p72).

Officers of the new company are: Carlo Boatti, chairman; Eugene Paul Getty, managing director; and Max Oberti and Carl Farbach, directors.

•

AUSTRALIA—The latest U.S. oil firm to move into exploration in Queensland is Plymouth Oil Co.

It is now acquiring prospecting rights on 29-million acres in the Cape York peninsula, north of Cooktown. Plymouth plans to start surface work immediately. In the past 1½ years, the Pittsburgh (Pa.) independent has also acquired exploration interests in the French Ivory Coast and Guatemala.

•

VENEZUELA—Phillips Petroleum has completed a second big producer on Lake Maracaibo Block 17, a concession it holds with a group of six other companies.

Phillips said last week that the well is flowing 35-gravity crude at the rate of 7,008 b/d from a "very thick" section of Eocene pay. The site is 3,500 ft. from the 6,600 b/d producer completed in December.

•

JAPAN—The independent refiner that imported the only Russian oil into Japan last year from Sakhalin has applied for a permit to import another 15,000 tons from the Black Sea. The firm, Taiyo Oil, would get 30-gravity Krasnodar crude through a Tokyo trading company that says the oil will cost $1.98 a bbl., f.o.b. Novorossisk.

•

EGYPT—Cairo's General Petroleum Authority plans to drill in the Western Desert, from which the four-company group headed by Continental Oil recently withdrew after drilling nine dry holes in 4½ years of exploration (PW—Oct.24'58,p6).

A government announcement said that GPA has already started exploration work in the Borg-al-Arab area, near Alexandria, site of the first wildcat drilled by the Conoco group.

•

FRENCH SAHARA—The French government is expected to give quick approval to the formal request for Sahara oil rights filed jointly by Jersey Standard and Cie. Francaise des Petroles.

The government last week announced that the application covers 7,722 sq. mi. in the Grand Erg Oriental, near the Tunisian border. Jersey's Cie. Esso Saharienee will be operator, with 50% interest. The French half will be held 35% by CFP's Algerian affiliate and 15% by the government-controlled Petropar.

A supervisory committee with three American and three French representatives will have a French president.

•

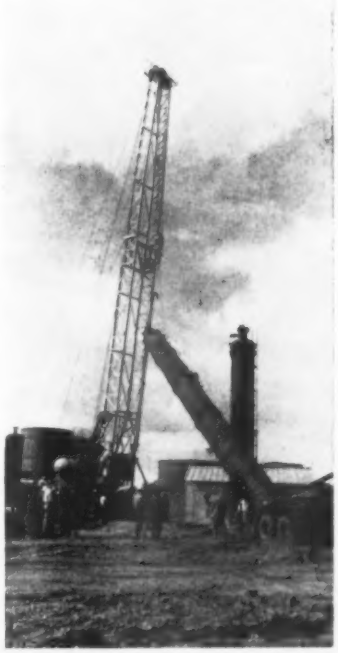
USSR—Oil output increased 15% in 1958 to 2,260,000 b/d, according to the Central Statistics Bureau in Moscow. Gas production jumped 48% to 2.9-billion cu. ft. daily.

•

AUSTRALIA—Magellan Petroleum Corp.—formerly Santiago Petroleum—is gearing to start exploration on oil rights now totaling 25.6-million acres in the Great Artesian Basin in Queensland (PW—Jan.16'59,p68).

The company, owned by the Buckley interests of the U.S., announced this week it has been awarded 22.4-million acres in the Tembo area on which it will do gravity meter and acrial magnetometer work this year. It also holds 75% interest on a nearby 3.2-million-acre block, on which it will start seismic work in May.

The Rig that Helped Build a Refinery



A California contractor has built a 1,000 b/d refinery in Thailand with the help of a drilling rig. Featuring a Wilson drawworks and a 96-ft. Bender mast, it was used to position refinery towers.

The unit is slated to go on stream this week. It is part of the Thai government's multimillion-dollar program to develop the country's oil resources. Refining Associates, Long Beach, Calif., is carrying out the program under contract. The project is expected to supply about 10% of Thailand's oil needs.

The rig is now being used in the drilling of some 30 wells in the Fang field, 90 mi. northeast of Chiangmai, second-largest city in the country (PW—May23'58,p46).

The company has already brought in 26 producers since mid-August. No accurate figures are available, but total production is estimated in excess of 1,000 b/d. Production is from around 650 ft. One of the better wells was completed for 60 b/d. Crude runs about 14-gravity.

Make Way for the Biggest Tanker of All

- **Because of its very size, the new 104,500-ton "Universe Apollo" will have limited impact on oil transportation today: Only a few world ports can handle the ship.**
- **But the new giant, first of at least several, points up the need for improved port facilities to handle the delivery of tomorrow's larger overseas crude shipments.**

The world's largest tanker, the "Universe Apollo," is now ready to lend its considerable weight—104,500 deadweight tons—to oil transportation.

When D. K. Ludwig's newest and greatest giant was launched in December at his Kure (Japan) shipyard (PW —Dec.12'58,p12), it stirred up all sorts of conjecture as to its likely effect on the shipping and oil industries.

Now, as it is being primed to go into service early next month, it seems to hold more immediate implications for ship-owners than for oilmen:

Size, the Apollo's most imposing feature, will enable it to carry far more oil than has ever before been moved in one shipment. But its size will also limit the immediate effect the ship will have on oil—the "Apollo" is so big it can get into very few ports.

At present, the huge tanker couldn't get into any U.S. port without some lightering.

U.S. port experts point out that tankers in the 84,000-ton class have docked in San Francisco, but only with some lightering in the bay. These observers add that a ship as big as the Apollo could serve Philadelphia area refineries only if considerable lightering took place before the ship moved up the Delaware River.

And they say that no other U.S. ports are even close to deep enough to accommodate the loaded or near-loaded draft of an Apollo.

This same port situation generally exists abroad, too.

As a result, the World Apollo in its early years will be used only to carry Persian Gulf crude 7,000 mi. to satisfy the fast-growing demand of Japan.

The Apollo will take crude from Kuwait Oil Co. at Mina-Al-Ahmadi, Kuwait, one of the few terminals in the world that can handle the ship. It will sail under Liberian registry, and will deliver its cargo—up to 1-million bbl.—to Idemitsu Kosan Co., Ltd., at a new terminal built with the Apollo's dimensions in mind at Tokoyama, Japan.

Japan is one of the fastest-growing oil markets in the world, so delivery of over 1-million bbl. of crude in one shipment isn't out of order.

Item: The nation's 1958 oil consumption—110-million bbl.—was up "only" 5% over 1957, because of what one economist calls "recessionary influences." (The nation's 1957 demand was 15% higher than in 1956.)

Item: Japan's refining capacity, now approaching 550,000 b/d, will almost double during the next five years.

Ludwig's future 100,000-tonners, according to his current plans, are also to be used in this service.

A Ludwig spokesman told PETROLEUM WEEK that construction will begin on his company's second 104,500-ton tanker, the "Universe Daphne," later this year. The Daphne is now expected to be in service "by early 1960."

And the official says that Ludwig's announced plans for three more 100,000-tonners (PW — Oct.11'57,p84) still stand.

But the Apollo also points up a long-range trend in tankers: Oil is going to move over oceans in increasingly larger cargoes, and port facilities are going to have to be enlarged to accommodate the coming leviathans.

Ludwig makes this case for the inevitability of Apollo-sized tankers:

"The economy of the world, as I see it now developing, is raw materials moving from one continent to another. And raw material, no matter what it is, has to be moved cheaply.

"And to move it cheaply, you've got to move in large quantities."

Ludwig contends that, as a result of the future need for such large shipments, "the world is moving portwise quite fast" in bringing facilities up to date.

But he is also somewhat cautious in his optimism:

AT LAUNCHING, the "Apollo" dwarfed other vessels in the Kure (Japan) shipyard where it was built.

"I don't say, that the ports and harbors of the world will be modernized reasonably soon to take 100,000-ton ships as a class. But don't forget that it was only 16 years ago that the British decided that a 10,000-ton Liberty ship was the most practical ship to enter the ports of the world.

"Today, nobody would consider such a ship as anything but obsolete, so far as economic costs are concerned, to move bulk cargoes."

There are several port projects planned around the world which would make possible handling of 100,000-tonners. Some could be completed within a few years, others are only foggy proposals.

A proposal to revitalize the port of Portland, Me., is one of the more concrete plans. Building and dredging operations are now under way there, and tankers as large as the Apollo might be able to dock there by the early 1960s.

Firmer yet is the port development now under way at Milford Haven, Wales. There, Esso Petroleum Co. and British Petroleum Co. are each building a set of docking facilities to accommodate tankers up to the 100,000-ton class.

Both are expected to be finished the end of 1960.

The cooperative organization set up by a group of international companies to build port facilities at Wilhelmshaven, West Germany, also envisions

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tankers in the 100,000-ton class docking there, and has planned its construction accordingly.

French port officials at LeHavre and Lavera (near Marseilles), France, have also expressed an intention to improve facilities at those harbors in order to handle 100,000-ton tankers. But these plans are not firm enough as yet for officials to have given any estimated completion date.

Everything about the Universe Apollo is big.

Just for the record, here are the new ship's principal statistics:

Tonnage, 104,520 dwt.

Length, 949 ft., 9 in.

Width, 135 ft.

Depth, moulded, 67 ft., 6 in.

Draft, fully-loaded, 48 ft.

Cargo capacity, estimated, 1,021,000 bbl.

Main engine, 25,000-hp. General Electric double-reduction-geared turbine.

Propeller, five-bladed, single-screw of manganese bronze, 24 ft., 8 in. in diameter.

Speed, 15.5 knots.

Construction of the $14-million tanker is regarded as a major milestone in shipbuilding circles.

The building of a 100,000-ton ship had come to be looked upon by many in the shipping industry as an unattainable goal.

Ludwig, in his address at the time of the Apollo's launching, made no secret of his pride of accomplishment:

"The building of a 100,000-ton ship has been an almost legendary ambition of shipbuilding generations of the past—the ultimate goal which everybody envisioned but never quite expected to attain.

"[Therefore], it was with particular pleasure that I arranged to attend the ceremony to witness this memorable event . . ."

What's New / IN TRANSPORTATION

Work is beginning on the new 290-mi. net that will connect gas production in seven South Texas counties with other transmission systems to eastern and midwestern markets (PW—Aug.22'58,p40).

The $12-million system is being built from wells in Hidalgo, Starr, Duval, Jim Hogg, Zapata, Webb, and Brooks Counties to tie into the systems of Transcontinental Gas Pipe Line Corp. and Texas Illinois Natural Gas Pipeline Co.

South Texas Natural Gas Gathering Co., a wholly-owned subsidiary of Coastal States Gas Producing Co., Corpus Christi, is building it.

The system is expected to make initial deliveries this spring.

South Texas Natural Gas is said to have ordered $5-million worth of pipe for the system from Mannesmann Mills, Dusseldorf, Germany.

•

Pipelines of Puerto Rico, Inc., has applied for permission to build two spur product lines out of San Juan—one 80 mi. west to Ramey Air Force Base, and another 2 mi. east to Isla Verde International Airport.

The company made its petition to the Puerto Rico Public Service Commission, which is still considering the company's application to build a 95-mi., 8-in. products line from Penuelas, on the South Coast, to the San Juan area (PW—Nov.7'58,p88). This line would feed the newly-proposed spur lines.

•

The new Federated Pipeline has just delivered its first crude from Swan Hills (Alta.) fields to an Edmonton refinery, the 11,000 b/d plant of McColl-Frontenac Oil Co., Ltd.

The new 122-mi. line, 10¾ and 12¾ in. in diameter, is presently carrying about 2,000 b/d. The flow will increase as additional wells come into production from the 13-rig drilling program now under way in the Swan Hills area.

McColl Frontenac and Home Oil Co., Ltd., are co-owners of the line.

•

The Pipe Line Contractors Assn. of Canada will hold its annual meeting in Bermuda, Feb. 25-28.

The Canadian pipeliners will hear talks by R. A. Brown, Jr., president of Home Oil Co., Ltd., Calgary; and William J. Klein, vice-president of Allis Chalmers Mfg. Co., Milwaukee.

•

The Great Northern Ry. has reopened discussions on its on-again, off-again proposed crude line from the Williston Basin to Minnesota and Wisconsin refineries.

The railroad has long planned to join the growing list of railroads that use their rights of way to build pipelines. But the road shelved such plans last year because it felt that North Dakota and Montana production didn't justify a line (PW—Jun.6'58, p6).

Now, with some prodding from Amerada Petroleum Corp., a major Williston Basin producer, Great Northern is taking a new look at the proposed 600-mi. line. Great Northern is said to be particularly impressed with recent Amerada production development along the Nesson anticline in northwestern North Dakota.

•

The Federal Power Commission has granted Michigan Wisconsin Pipe Line Co. temporary authority to begin a $31-million expansion program along its gas system in Kansas, Missouri, Iowa, Illinois, and Michigan.

The expansion will include construction of 353 mi. of 14-in. loops along the system, and 16,560 additional compressor horsepower.

•

Colorado Interstate Gas Co. is selling 110 mi. of its transmission system in southeastern Colorado to Citizens Utilities Co., which distributes natural gas in the area.

If the sale of the line is approved by the Federal Power Commission, Citizens Utilities will take over delivery of gas to La Junta, Rocky Ford, Swink, Ordway, Fowler, Manzanola, Las Animas, Ft. Lyon, Crowley, Olney Springs, and Sugar City.

It will also extend the system to serve more Arkansas Valley communities.

•

LPG from the Southwest is now serving northeastern markets.

Texas Eastern Transmission Corp. said last week that LPG that was moved from the Houston area to Todhunter, Ohio, in the company's Little Inch products system is now being shipped from Todhunter to "northeast consuming points" by tank car.

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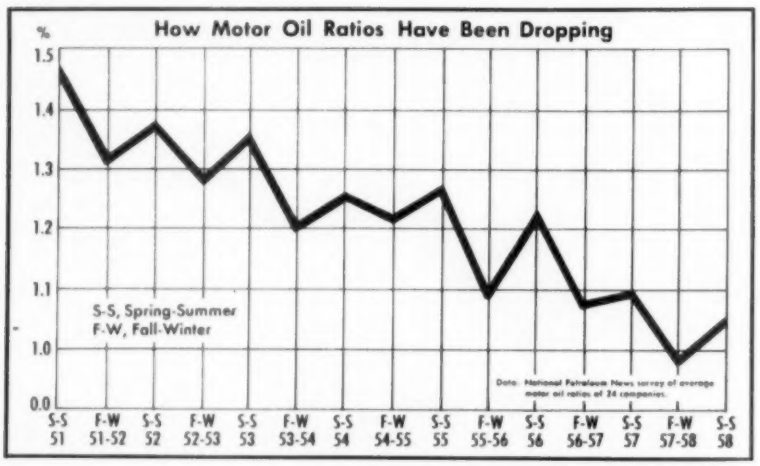


Lube Sales Still Sliding

The long-term decline in sales of motor oil is continuing, latest figures indicate. The "motor oil ratio" in the spring and summer of 1958 was 3.7% below the same period of 1957, according to National Petroleum News, a McGraw-Hill publication.

(The motor-oil ratio represents the number of gallons of motor oil sold for each 100 gal. of gasoline pumped. That is, a ratio of 1.07 means that 1.07 gal. of motor oil were sold for each 100 gal. of gasoline).

It is true that the 1958 spring-summer ratio was 10% above the fall and winter of 1957-58. But this is a normal seasonal decline; motor oil sales always are lower in the cold months. The important thing to note is that, with one exception, each spring-summer ratio in the past several years has been lower than the preceding one; the same is true of the fall-winter ratios (chart, above).

Actually, the drop in the 1958 spring-summer ratio, compared with 1957, was the lowest since 1955.

The NPN figures come from reports contributed by 24 companies that market throughout the country.

Figures from oil companies surveyed indicate that, since spring-summer 1955, total motor oil gallonage has dropped about 4.7%, while the number of passenger cars has increased 10.1%.

Of 43 geographical marketing areas, reports from 30 showed motor oil gallonage less than 1955. The other 13 showed slight gains.

The lower motor oil ratio in spring-summer of 1958, as compared with the same period of 1957, represents a loss of around 6-million gal. of potential motor oil sales.

A 2.5% increase in the passenger car population is credited with keeping the 1958 sales volume from dipping even more than it did. Nevertheless, the figures indicate that the average motorist bought 0.44 qt. less motor oil in spring-summer 1958 than he did the year before.

One of the obvious reasons for the continuing decline in motor oil sales is the greater time interval between oil changes.

In spring-summer 1958, the average motorist drove 2,906 mi. between oil changes—an increase of 518 mi., or a whopping 21.7%, over the year before.

But over the same period, the total number of miles driven per car during the six-month period increased by only 78 mi. over the previous year—from 4,920 mi. to 4,998 mi., or only 1.6%.

The big question that lube marketers are pondering is whether any way can be found to halt the steady decline.

Auto manufacturers are being blamed for suggesting unrealistic time intervals between oil changes. But poor pump island merchandising, lack of sufficient advertising, and inadequate consumer education are also suggested as contributors to the decline.

Lube men are waiting hopefully to see what the API lube committee, with its new $75,000 appropriation, can do to reverse the falling motor oil trend.

Some of the committee's appropriation will be used to employ a public relations organization for the purpose of reversing the consumer trend toward longer intervals between oil changes.

Probably the most immediate relief the committee can give, though, will be through proposed talks with Detroit auto manufacturers concerning suggested oil-change periods.

The committee will probably offer to increase its suggested period of every 1,000 mi. if the auto makers will reduce their suggested interval of 4,000 to 5,000 mi.

What's New
IN MARKETING

American Petrofina, Inc., has named Midwest Petroleum Co. as marketer for Fina products in the greater St. Louis area. Midwest, formerly a distributor for Tidewater Oil Co., has 78 stations in St. Louis and suburban areas, 24 fuel oil distributors, and other commercial and consumer accounts.

•

California Texas Oil Co., Ltd., eastern hemisphere marketer, is distributing a pocket-sized booklet called "Driving Abroad" at 1,500 independent travel bureaus in 49 states, the District of Columbia, Hawaii, and Puerto Rico.

The booklet for the European traveler is also available at touring offices of Standard Oil Co. of California, The Texas Co., and California Texas Oil Corp. Copies will also be distributed through European travel agencies, hotels, and service stations.

"Driving Abroad" illustrates international road signs and maps; translates European road signs into English; converts European money and measurements into U.S. equivalents; and lists many other motor travel tips.

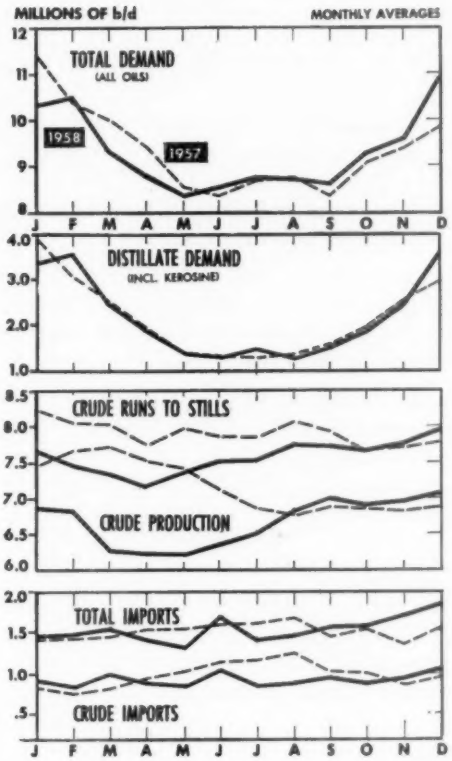
•

A legislative program to regulate gasoline sales in California has been proposed by Assemblyman Bruce F. Allen, chairman of the Assembly's judiciary interim committee.

The program would strengthen the state's antitrust and unfair-trade-practices acts; prohibit price discrimination in gasoline sales; establish a commission similar to the Federal Trade Commission, and an antitrust division in the attorney general's office; and require that the octane rating of gasoline be posted at the pump.

PETROLEUM WEEK'S

Fingertip Figures



TOTAL DEMAND

Latest 4-week average	11.195
Year ago	10.229

DISTILLATE DEMAND

Latest 4-week average	3.818
Year ago	3.283

RUNS TO STILLS

Latest week	8.311
Previous week	8.129
Year ago	7.639

CRUDE PRODUCTION

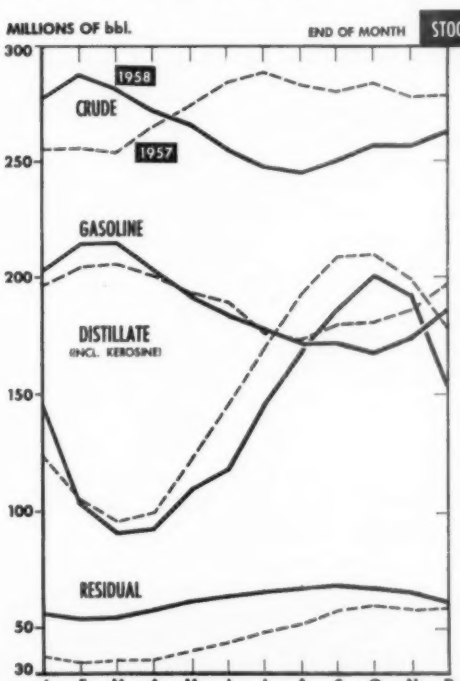
Latest week	7.194
Previous week	7.087
Year ago	6.923

TOTAL IMPORTS

Latest week	1.567
Previous week	1.821
Year ago	1.591

CRUDE IMPORTS

Latest week	.729
Previous week	.869
Year ago	.937



CRUDE STOCKS

Week-ended 1-17	260.1
Previous week	260.3
Year ago	277.1

GASOLINE

Latest week	192.6
Previous week	190.7
Year ago	203.3

DISTILLATES

Latest week	121.8
Previous week	132.3
Year ago	152.3

RESIDUAL

Latest week	59.9
Previous week	59.4
Year ago	57.8

An average of 1,885 rotary rigs operated in the U.S. in January, a decline of 134 from the previous January.

The rate for the month was the poorest for any January since 1950.

The largest part of the decline in rotary operations occurred in the first three ranking oil producing states—Texas, Louisiana, and California—which accounted for a drop of 109 rigs from last January.

Total rigs operating in Texas for the month were off 72. In Louisiana the decline amounted to 24 rigs, and in California 13 fewer rigs were running than last January.

Among the first ten producing states, rotary operations in New Mexico were down by 19 rigs, activity in Colorado declined by 10 rigs, and in Utah, where current crude production is up eight-fold over a year ago, activity was down by 20 rigs.

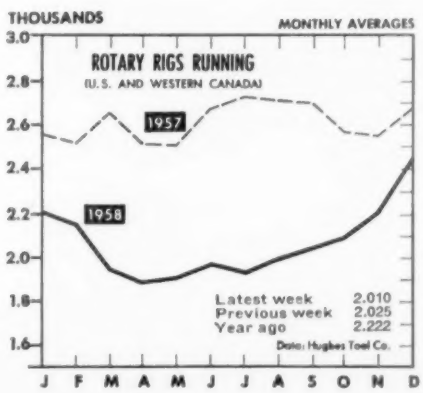
Only four of the ten largest producing states had increases in rotary drilling operations from last January.

Oklahoma had a gain of 4 rigs, Wyoming was up 7, Kansas increased by 10, and Illinois had a gain of 6.

The largest percentage gain in rotary drilling activity in January in any active state occurred in Mississippi, where an average of 58 rigs operated during the month, up 9 units from the previous January.

Other increases in rotary rig activity were in Alabama (+1), Indiana (+1), Kentucky (+3), Maryland (+2), Michigan (+4), Nebraska (+2), Ohio (+1), Pennsylvania (+3), and Washington (+1).

Rotary drilling operations in Canada during January were off seven units from a year ago.



The Market Trend

No. 2 Fuel Has One Eye on the Weather

Distillates were real "weather" products this week. On a cold day in New York, feelers went out to the Gulf for the possibility of buying extra cargoes. On a warm day in New York, the buyers laid low.

No. 2 fuel is like a stock with a lot of shorts in it. Any real buying now could push the prices up vigorously.

For inventories now have been worked off to the point where marketers may have trouble keeping working balances in their network of bulk plants. Be on the lookout for part-cargo discharges and expensive truck hauls to keep up the even flow of supplies. If product really gets tight, these unusual distribution tricks will be the tip-off.

At the Gulf, there are very few cargoes of No. 2 fuel available for February loading. One independent says now that he's sold out—almost oversold—through March. Of course, higher prices would probably bring to light a few cargoes that are not otherwise apparent.

Looking back over the season, the marketers who first made the decisions to buy spot have come out very well indeed. The purchase of a Gulf Coast cargo in early January at 9.25¢ (a new high at the time) looks good today, when No. 2 is hard to find at 9.625¢. Also, the New York buyers who risked going all the way to the West Coast for No. 2 fuel are something like 0.5¢ to 0.8¢ to the good, relative to current delivered cargo prices on the Atlantic seaboard.

Looking ahead, some Southwest refiners already are making their annual trek to the East Coast with an eye to next year's supply contracts. It's a good bet that suppliers will try to talk tougher terms for the future. Marketers, on the other hand, will cite discounts by the competition. Somewhere along the line, agreements will be reached.

Russian Oil In New York?

Mr. Mikoyan had scarcely departed when rumors of a pending Black Sea-to-New York fuel oil deal circulated in New York. Nobody was willing to say much, but some East Coast terminal operators appeared remarkably well informed on Black Sea fuel oil specifications.

Despite ample precedents in Black Sea imports (benzol and chrome ore), it's unlikely that any East Coast marketer will touch the Russian fuel oil; they feel it's too hot to handle. But as one trader put it, "It's a case of price vs. stigma."

A Dent In The Surplus:

This winter's extremely cold weather, both at home and in Europe, may be the first wedge to break the world-wide oil surplus. For the first time since Suez, refiners in the Caribbean were turning down spot orders for gas oil.

Before the winter started, the U. S. West Coast, the Caribbean, and the Persian Gulf all were glutted on heavy fuel oil. Now at least one area—the Caribbean—has inventories in handy control.

Expensive Gesture:

A Houston retailer managed to sell 10,000 gal. of gasoline in six hours by cutting the price to 3.9¢ a gal. (ex taxes). It was a costly gesture in opposition to price wars in that city. The dealer, W. S. Satterfield, of K. C. Oil, dropped a quick $4,000.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of January 27

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....11.75-12.75
- Gasoline, 92 oct reg....10.5-11.5
- Kerosine....10.125-10.25
- **Heating oil, No. 2....9.625↓-9.875**
- Gas oil, 48-52 d.i....9.875
- Fuel oil, bunker "C"....$2.00-2.10

Caribbean, cargoes
- Avgas, Grade 100/130....16
- Gasoline, 93 oct research prem....10.75
- Gasoline, 87 oct research reg....9.875
- Gasoline, 79 oct research....9.125
- Gasoline, 70-72 oct motor method....9
- Kerosine....10.375
- Heating oil, No. 2....9.625
- Gas oil, 48-52 d.i....9.875
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- **Kerosine....11.5↑**
- **Heating oil, No. 2....11↑**
- Fuel oil, No. 6....$2.37-2.45

Okla-Group 3, northern shpt., bulk
- Gasoline, 89 oct reg....11.5-12.375
- **Kerosine....10.75↑-11.25↑**
- **Heating oil, No. 2....9.75↑-10↑**
- Fuel oil, No. 6....$1.80

Chicago, bulk
- Gasoline, 91 oct reg....11.5
- Heating oil, No. 2....10.5-11.85
- Fuel oil, No. 6 high sulfur....7.65-7.75

Los Angeles, rack
- Gasoline, 88 oct reg....12-12.6
- Diesel fuel, PS 200....10-11.25
- Light fuel, PS 300....$2.80
- Heavy fuel, PS 400....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....5.5

Pennsylvania Lubes
- Bright stock, 25 p.t....22
- 200 vis. neutral, 25 p.t....21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....23-24
- Neutral, solvent, 200-210 vis....19.5-20.5

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....24
- Neutral, solvent, 200 vis....20.5

Eastern Hemisphere

Singapore (Pulau Bukom), cargoes
- Avgas, grade 100/130....17.25
- Gasoline, 79 oct research....10
- Kerosine....10.75
- Gas oil, 48 d. i. minimum....10.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9....$2.77-3.07
- North Dakota, 36.0-36.9....2.62-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00-3.07
  - West Texas, N. M., inter., 36.0-36.9....2.93-3.00
  - West Texas, N. M., sour, 32.0-32.9....2.71-2.86
  - East Texas, flat....3.25
  - Mirando, 28.0-28.9....3.31
- Illinois Basin, flat....3.00
- Pennsylvania Grade, Bradford dist., flat....4.05
- California, Signal Hill, 21.0-21.9....2.50†
- North Louisiana-Arkansas, 36.0-36.9....2.77-3.02
- Wyoming, sweet, 36.0-36.9....2.90-3.00
- Wyoming, sour, 32.0-32.9....2.71

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.)....$2.61
- Leduc-Woodbend (Alta.)....2.67
- Redwater (Alta.)....2.56
- Daly (Man.)....2.39
- Smiley (Sask.)....2.33

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 48.0-48.9, Tucupido....$3.66
- San Joaquin, 41.0-41.9, Puerto la Cruz....3.25
- Oficina, 35.0-35.9, Puerto la Cruz....3.05
- Tia Juana, Medium, 26.0-26.9, Amuay....2.55
- Bachaquero, flat, Las Piedras....1.78-1.93
- Tarra, 38.0-38.9, San Lorenzo....3.08
- Lagunillas Heavy, flat, Cardon....2.10

†*Differential per deg. of grav. varies.*

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$2.08
- Safaniya, 27.0-27.9, Ras Tanura....1.65
- Iran, 34.0-34.9, Bandar Mashur....2.04
- Iran, 34.0-34.9, Abadan....1.99
- Iraq, 35.0-35.9, Fao....1.98
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.85
- Qatar, 41.0-41.9, Umm Said....2.23
- Neutral Zone, Burgham, 23.5-24.4, Mina Saud....1.61
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud....1.43

Middle East, Eastern Mediterranean
- Arabian, 36.0-36.9, Sidon....$2.49
- Iraqi, 36.0-36.9, Tripoli, Banias....2.49

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, 37-38....$2.75

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- U.S. Gulf-New York, clean....(USMC +15%) $3.28
- **U.S. Gulf-New York, dirty....(USMC +15%) $3.28↓**
- NWI-USNH, dirty....(USMC —55%) $1.24
- NWI-UK/Cont., dirty....(Scale —42½%) 18/8*
- Per. Gulf-UK/Cont., dirty....(Scale —52½%) 29/4*
- Persian Gulf-USNH, dirty....(USMC —70%) $3.81

**Sterling.*

DEPT/Service & Equipment Companies

J. V. Spalding

H. L. Hawkinson, Jr.

W. J. Brady

R. O. Branyon

J. V. SPALDING has been promoted to general manager of sales for Bethlehem Steel Co., Supply Division, with offices in Tulsa. At the same time **H. L. HAWKINSON, JR.,** was appointed manager of the Gulf Coast division in Houston, and **W. J. BRADY,** division sales manager-projects, also in Houston. **R. O. BRANYON** has been named sales manager for products manufactured by Rolo Mfg. Co., with headquarters in Houston. Rolo and Bethlehem Supply recently announced that Rolo products would be distributed through Bethlehem's 66 oil country stores and offices. Spalding, with Bethlehem Supply since 1939, was most recently sales manager of the Gulf Coast division. Hawkinson was formerly manager of machinery sales for that division. Brady has been resident sales manager in Houston for the past six years, and Branyon has been division machinery sales representative there.

J. D. SLOAN is vice-president of purchasing for Youngstown Sheet & Tube Co., and **Thomas G. Lewis** succeeds him as purchasing agent in the general offices in Boardman, Ohio. Lewis was formerly assistant purchasing agent. **William B. Seeman,** formerly a buyer in the purchasing department, becomes a group leader, buyer, in that department.

MWL TOOL & SUPPLY CO., Midland, Tex., is sales agent in the Rocky Mountains for oilfield products manufactured by ALCO Products, Inc. MWL has a sales staff in New Mexico, Colorado, Utah, and Arizona.

M. C. NIBLACK has been promoted to manager of the sales department of Iverson Supply Co., Tulsa. Niblack, with the company for 12 years, succeeds **T. D. Collins,** who has resigned because of ill health. **John R. Bryant** transfers from Snyder, Tex., where he was store manager, to Dallas, as city salesman, and **Paul D. Iverson, Jr.,** transfers from Kermit, Tex., where he was field salesman, to Midland, as city salesman. **Peter C. Iverson** has been promoted to store manager in Snyder from field salesman there.

F. G. WINSPEAR, president of Premier Steel Mills, Ltd., and Edmonton Steel Fabricators, Ltd., and **G. M. CHEATHAM,** president of Maloney-Crawford Tank & Service Co., Ltd., have announced that Maloney-Crawford will assume operation of the tank and steel fabricating facilities of Edmonton Steel. Maloney-Crawford will move its Edmonton offices to Edmonton Steel's fabricating plant outside of that city.

BERNARD L. MAJEWSKI, president of Great American Oil Co., Chicago, has been elected a director of Universal Oil Products Co., Des Plaines, Ill. He succeeds **Fred C. Koch,** who has resigned. Majewski, associated with the oil industry since 1909, is also a director of the American Petroleum Institute and of the Independent Petroleum Assn. of America.

EDWIN F. SHELLEY has been elected president of USI Robodyne, a division of U.S. Industries, Inc. Shelley will maintain offices in New York and in Silver Spring, Md., where USI Robodyne's plant is located. In addition to his new appointment, Shelley will continue as director of advanced programs for U.S. Industries.

J. C. WILLIAMS, JR., Springhill, La., is the new president of the Assn. of Oilwell Servicing Contractors. Other new officers of the association are: **Leo J. Kent,** El Dorado, Kan., and **Jimmy W. Wilkins,** Andrews, Tex., vice-presidents, and **Barney Foster,** Odessa, Tex., secretary-treasurer.

E. F. Shelley

R. O. Branam

RAY O. BRANAM has been elected vice-president and a director of Midwestern Mfg. Co., Tulsa, manufacturer of hydraulic side-booms and pipeline attachments. Branam has been Midwestern's general manager in charge of engineering, production, and sales for the past year. Before that, he was associated with Emsco Mfg. Co., and Hughes Tool Co.

DR. J. E. HAWKINS, vice-president of Seismograph Service Corp., Tulsa, is also vice-president and manager of Seiscor Mfg. Co., a new SSC manufacturing division in Tulsa. The new division will provide engineering and production facilities and precision equipment to the oil and other industries. The new division has been built around the personnel and facilities that formerly comprised SSC's research, development, and manufacturing division.

T. J. (TED) BICKNELL is manager of The Western Co.'s new district service point at Seminole, Okla. Bicknell, with Western for 11 years, has served at Guymon, Okla., Ulysses, Kan., and Borger, Odessa, Rankin, and Seagraves, Tex. The newly-formed district will serve oil fields in central Oklahoma.

T. J. Bicknell

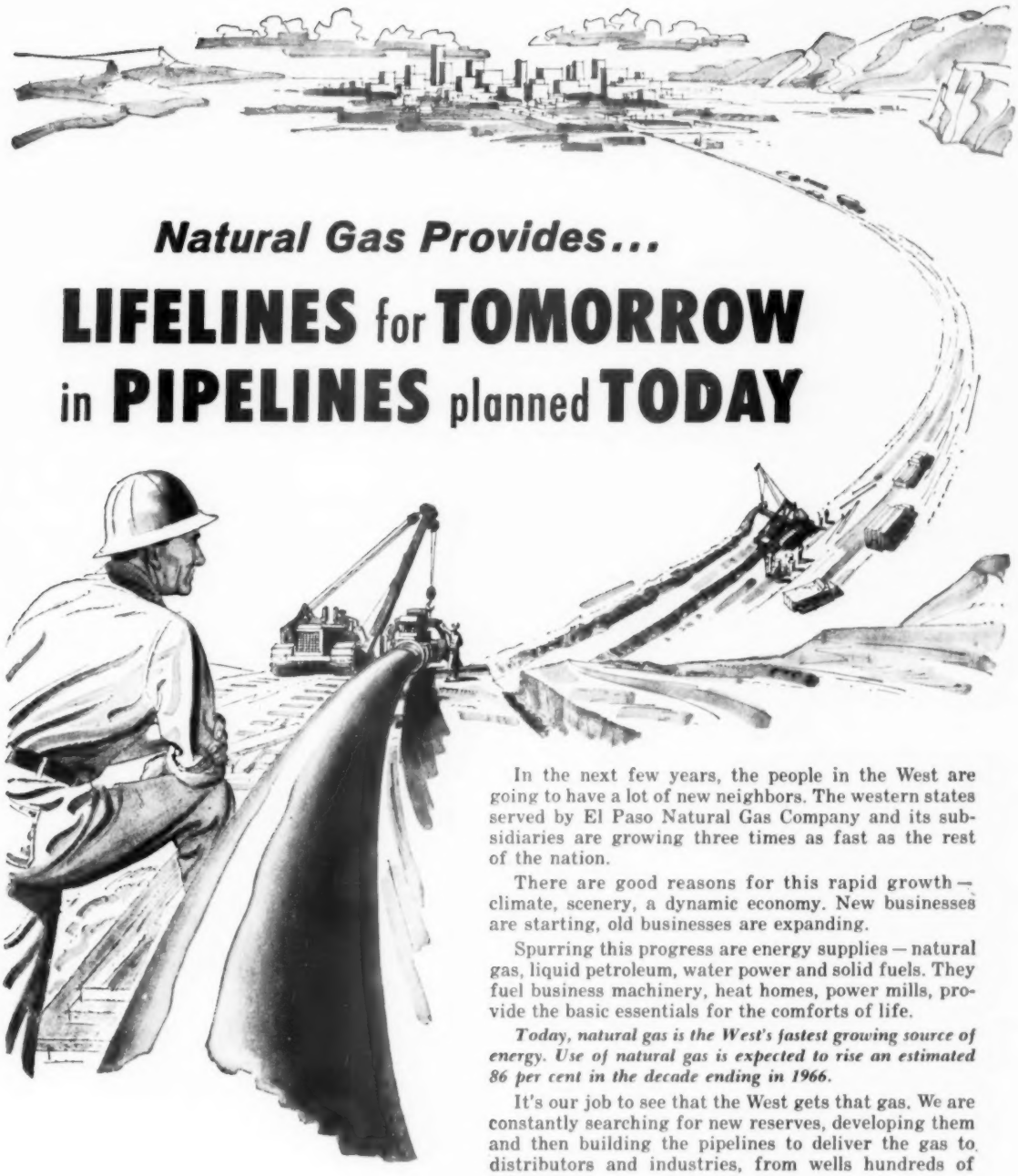
R. Lilley, Jr.

ROY LILLEY, JR., has been appointed general manager of Lufkin Overseas Corp., S. A., with headquarters in Maracaibo, Venezuela. Lilley joined Lufkin Foundry & Machine Co., Lufkin, Tex., parent of the South American company, in 1953. He was formerly located in Casper, Wyo., and Sidney, Mont.

DON RHOADS is special sales representative for Cardwell Mfg. Co. in Kansas, and in key oil centers in Oklahoma. He will maintain offices in Wichita, and will be available for contact in Tulsa, Oklahoma City, Bartlesville, Ponca City, and Great Bend. Rhoads has been associated with Gulf Oil Corp., Jones & Laughlin Supply Division, and Bethlehem Steel Co., Supply Division.

T. R. COLLINS has been named manager of the recently combined West Texas and New Mexico sales districts of Garrett Oil Tools, Division of U. S. Industries, Inc., with headquarters in Hobbs, N. M. Collins was formerly manager of the New Mexico district. The West Texas portion of the new district will continue to be handled through the Odessa office: **J. W. Staples** will be in charge. **W. K. Woodward,** formerly West Texas district manager, has been named special sales engineer in charge of city sales in the Houston district. At the same time, **William K. Holleron** transferred from Casper, Wyo., to Houston, where he will be supervisor of sales for milling and coring operations.

RAY T. RIGNEY has been appointed field service manager for Lee C. Moore Corp., Tulsa. Rigney, formerly assistant plant superintendent at Tulsa, will now direct all field service operations and personnel.



Natural Gas Provides...

LIFELINES for TOMORROW in PIPELINES planned TODAY

In the next few years, the people in the West are going to have a lot of new neighbors. The western states served by El Paso Natural Gas Company and its subsidiaries are growing three times as fast as the rest of the nation.

There are good reasons for this rapid growth — climate, scenery, a dynamic economy. New businesses are starting, old businesses are expanding.

Spurring this progress are energy supplies — natural gas, liquid petroleum, water power and solid fuels. They fuel business machinery, heat homes, power mills, provide the basic essentials for the comforts of life.

Today, natural gas is the West's fastest growing source of energy. Use of natural gas is expected to rise an estimated 86 per cent in the decade ending in 1966.

It's our job to see that the West gets that gas. We are constantly searching for new reserves, developing them and then building the pipelines to deliver the gas to distributors and industries, from wells hundreds of miles away.

This effort pays off in the assurance that years in the future — even with demand growing at a record pace — the West will have the *energy supplies* essential for continued growth.

EL PASO NATURAL GAS COMPANY

Common Stock listed on the New York Stock Exchange, Midwest Stock Exchange and Pacific Coast Stock Exchange.

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Brown & Root, Inc. 6
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1301 Rhodes-Haverty Bldg.
Jackson 3-6951

Boston 6 — Donald R. Thompson
350 Park Square Bldg.
Hubbard 2-7160

Chicago 11 — Edward A. Callahan Jr.
520 North Michigan Avenue
Mohawk 4-5800

Cleveland 15 — J. E. MacArthur
1164 Illuminating Bldg.
55 Public Square
Superior 1-7000

Denver 2 — J. W. Patten
Mile High Center, 1740 Broadway
Alpine 5-2981

Houston 25 — D. O. Hanson
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San Francisco 4 — William C. Woolston
68 Post Street
Douglas 2-4600

Tulsa 3 — J. A. Hartley
909 Enterprise Bldg.
522 South Boston
Gibson 7-5594

England, London E. C. 4 — E. E. Schirmer
McGraw-Hill Co., Ltd.
95 Farrington St.

DEPT/Personals

S. W. TOTTEN has been named vice-president, general manager of exploration, and a director of Standard Oil Co. of California, Western Operations, Inc., with offices in San Francisco. He succeeds **O. F. Van Beveren,** who has been named vice-president of American Overseas Petroleum, Ltd., eastern hemisphere exploration and producing company jointly owned by California Standard and The Texas Co. Totten was formerly located in Denver, where he was vice-president of The California Co., Standard's mid-continent production, exploration, and marketing subsidiary. **H. C. Bemis,** formerly superintendent of Western Operations' Southern California exploration district, succeeds Totten in Denver.

S. W. Totten

R. A. Ny

RICHARD A. NY has been elected treasurer of Tidewater Oil Co., with headquarters at the home office in Los Angeles. He succeeds **Russell D. Richardson,** who continues as vice-president of finance and controller. Ny was formerly assistant treasurer. **Jack J. Leener** has been appointed nondivisional advertising manager of Tidewater, at the home office. For the past ten years, Leener has served as a senior account executive for Edward S. Kellogg Co.; Stromberger, LaVene; the McKenzie Agency; and West-Marquis, Inc., all advertising agencies in Los Angeles.

R. E. FOSS and **H. O. HARDER** have been named senior vice-presidents of Sunray Mid-Continent Oil Co., Tulsa. Foss will direct production, and Harder exploration. Foss and Harder, both former vice-presidents, were elected directors of the company last year. **John H. Douma** has been named vice-president and manager of Sunray Mid-Continent's West Coast division, with headquarters in Los Angeles. He succeeds **F. W. (Dick) Borden,** who has resigned. Douma became manager of joint operations in 1956, and has been responsible for oil and gas production dealings with other operators in the Mid-Continent area.

C. E. SMITH, JR., has been assigned to Humble Oil & Refining Co.'s Houston office as operations advisor to **Charles F. Jones,** manager of the manufacturing department. He was formerly assistant superintendent of the operations service division at the Baytown (Tex.) refinery. Smith will have staff responsibility for assisting Jones in matters relating to the Baytown refinery. He will also be in charge of Humble's special products manufacturing and fuel oil terminals division, formerly part of the company's marketing department.

C. F. MARTINEAU has been appointed special assistant to Shell Oil Co.'s general manager of head office marketing department, with offices in New York. **D. B. Clark,** formerly sales manager of the Seattle (Wash.) division, replaces Martineau as sales manager of the New York division. **J. G. Williams,** district manager of Shell's Honolulu district, succeeds Clark.

DON W. DETJEN has been named executive assistant to the management of Valvoline Oil Co., Freedom, Pa., a division of Ashland Oil & Refining Co. Valvoline operates a refinery in Freedom, and has sales and operating offices in principal cities across the country. Detjen will be responsible for the sales of Valvoline branded motor oils and lubricants. He joined Ashland in 1948 as a chemical engineer in the company's technical service department. He was transferred to the sales department in 1949.

V. W. MEYTHALER has been elected vice-president and treasurer of Texas Gas Transmission Corp., Owensboro, Ky. Meythaler, with Texas Gas since 1949, was elected assistant treasurer in 1953, and was made treasurer in 1955.

V. W. Meythaler

E. H. Brown

EDWIN H. BROWN has been appointed vice-president of finance for Commonwealth Oil Refining Co., with headquarters at the home office in Ponce, Puerto Rico. Prior to this appointment, Brown was vice-president of finance, treasurer, and a director of Clark Oil & Refining Corp., Milwaukee, Wis.

C. J. COLBY is manager of the New York City office recently opened by Kerr-McGee Oil Industries, Inc. He has been manager of marine construction at Kerr-McGee's Pascagoula (Miss.) and New Orleans offices for the past several years. Before that, he was director of purchases in the company's home office in Oklahoma City.

VICTOR H. KING has been named exploration manager of Mobil International Oil Co., new overseas operating division created by Socony Mobil Oil Co., which will begin operations on Mar. 1. He will report to **H. R. Moorman,** Mobil Interna-

tional's vice-president of exploration and production. King was elected a director of General Petroleum Corp. in charge of exploration earlier this month. He will resign this position with Socony's West Coast affiliate. **Geoffrey R. Lucie-Smith** has been named producing manager, reporting to Moorman. Lucie-Smith is now assistant general manager of Libyan operations of Mobil Oil Co. of Canada, Ltd. **William E. Lindenmuth** has been named regional executive for the Middle East, reporting to **Rawleigh Warner, Jr.,** Mobil International's vice-president for the Middle East. Lindenmuth has been an attorney in the Socony Mobil office of general counsel since 1955.

JOHN F. MERRIAM, president of Northern Natural Gas Co., Omaha, Neb., has been elected president of Helex Co., recently formed by Northern Natural and Air Products, Inc., Allentown, Pa., for the extraction of helium from natural gas. Other officers of the new company are: **M. L. Mead,** senior vice-president; **F. C. Nicholson,** vice-president; **W. H. Thomas,** vice-president of sales; **B. H. Harper,** secretary; and **H. H. Siert,** treasurer. Thomas is with Air Products; the other officers are connected with Northern Natural. Helex directors include Merriam, Mead, and **A. B. Dilworth,** from Northern, and **Leonard Pool** and **Edward Donley,** from Air Products.

JAMES M. WHEAT has been promoted to division geophysicist at Midland, Tex., for Sinclair Oil & Gas Co. He succeeds **J. A. Hall, Jr.,** who recently accepted a foreign assignment with another Sinclair company. Wheat, with Sinclair since 1956, was most recently district geophysicist in Lafayette, La. **Daniel R. Gentry,** formerly chief division production clerk for Sinclair in Houston, becomes administrative assistant in the executive department in New Orleans. Gentry was chief clerk in the production department of Southern Production Co., in Ft. Worth, when Sinclair acquired it in 1956.

R. J. DERBY was appointed associate general counsel of The Texas Co. on Jan. 19. He transfers to Texaco's New York office from its Houston office, where he has been general attorney since 1956. **J. J. O'Keefe,** formerly assistant general attorney in Houston, succeeds Derby. At the same time, **A. B. Steed** was appointed general attorney in the New York office. He has been an attorney for Texaco in New York since 1954.

DAVID B. SCHULZ has joined BBM Drilling Co. as West Texas division drilling superintendent, with offices in Midland. He was formerly associated with George P. Livermore, Inc., and Lubbock & Dixon Drilling Co.

EDWARD E. EMRICK will succeed **E. W. SEATON** as treasurer of Ashland Oil & Refining Co., when the latter retires this year. Seaton will continue as an Ashland director. Emrick presently is serving as assistant treasurer and as manager of Ashland's exploration-production department. **Ray L. Althouse,** formerly president of Royalite Oil Co., Ltd., Calgary, has been named head of the exploration-production department to succeed Emrick.

DONALD H. SWANSON is Kansas retail sales manager for Vickers Petroleum Co., with offices in Hutchinson, Kan. Swanson, with Vickers since 1953, was most recently western Kansas sales representative, at Hutchinson.

SAMUEL D. MORGAN is the new sales manager of Goodrich-Gulf Chemicals, Inc., Cleveland. Morgan, formerly manager of sales operations, will be responsible for the national sales activities of Ameripol rubber.

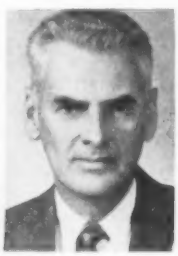
LORING B. SNEDDEN is chief geologist for Signal Oil & Gas Co., Los Angeles. Snedden joined Hancock Oil Co. in 1954, as chief geologist. Signal and Hancock merged on Dec. 31. From 1952 to 1954, Snedden was president of Intex Oil Co. Prior to that, he was associated with The Texas Co.

JOHN R. HANNAN has been named office manager for Sun Oil Co.'s Gulf Coast division, at Beaumont, Tex. He succeeds **Sidney C. Shockley,** who is retiring. **George A. Burleson,** formerly supervising auditor at Beaumont, succeeds Hannan as assistant office manager there.

JOSEPH P. HULL, JR., has joined Kerr-McGee Oil Industries, Inc., as staff exploration geologist at the Oklahoma City headquarters office. He was formerly associated with Humble Oil & Refining Co. in Midland, Tex.

JACK TIGHE, former manager of the Detroit Tigers baseball team, has been named public relations manager for Naph-Sol Refining Co., Muskegon, Mich.

G. L. Lory



John Getgood

JOHN GETGOOD is manager of Phillips Petroleum Co.'s new foreign sales and development department, in New York, and **G. L. LORY** succeeds him as Phillips's general sales manager in Bartlesville, Okla. Lory has been an assistant sales manager since 1955. **G. E. Glatfelder,** formerly an assistant sales manager, has been promoted to senior assistant sales manager. **G. J. Morrison** becomes an assistant sales manager, and **J. E. Chisholm** succeeds him as division sales manager in Atlanta, Ga. Chisholm has been senior assistant division manager in Atlanta since 1957.

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Producers Hold Spacing Key

ECONOMIC ILLS OF OIL PRODUCERS can be attributed in part, at least, to uneconomic well spacing, a growing number of producers say. Few in the industry will argue with them.

But some producers go further, to blame uneconomic spacing on the various state regulatory agencies. That should provoke much argument, because it is erroneous.

State regulatory bodies are, by law, administrative in nature. Their function is to administer the conservation laws of their states. Any operating rules and regulations approved by those commissions reflect the requests of the entities—in this case, oil producers—that are subject to conservation commission regulations.

Any criticism of well spacing in the conservation-minded states actually reflects on producers—both independent and major. For in practice, requests for well-spacing patterns all too frequently are based on economics rather than conservation.

WHEN TIMES ARE GOOD, some operators appeal to the various conservation agencies for close spacing of wells, frequently asking for exceptions to established drilling practices.

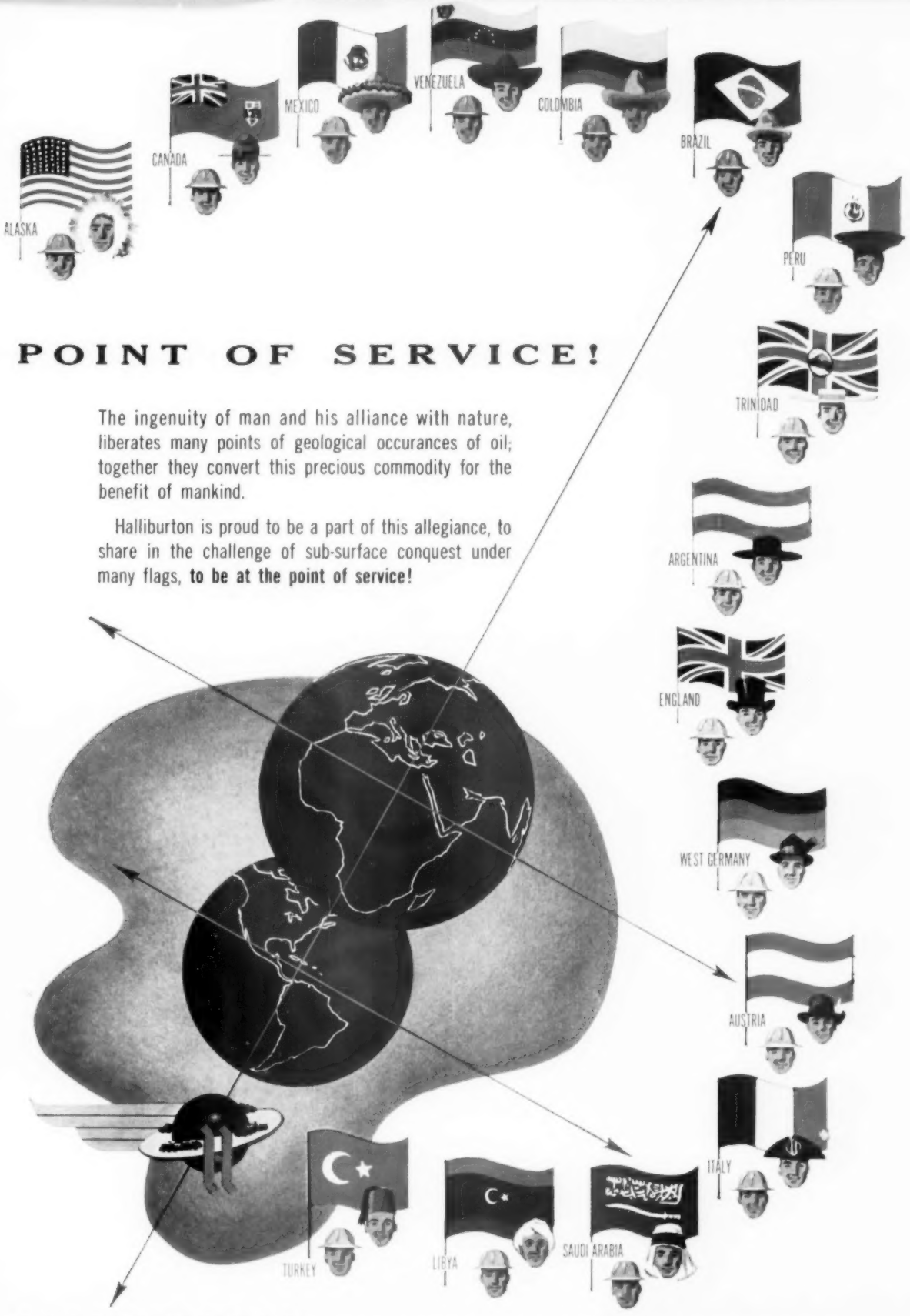
But when the economic trend is reversed, the same group of producers will come forward urging the widest possible spacing as a minimum rule. They can truthfully argue that the spacing pattern in some areas constitutes economic waste. But that is not, as is sometimes charged, due to the dictates of regulatory bodies.

Well spacing is flexible, depending on individual reservoirs. Spacing that would be "wide" in one area may not be so in other regions. But the time to determine a spacing pattern in any area is when the initial wells are drilled. And that determination depends on the operators in the particular area.

If wells are drilled on a close pattern in the beginning, it is difficult, if not impossible, to switch to a wider spacing pattern later in the development of an area.

CONSERVATION IS EVERY PRODUCER'S BUSINESS. But when operators talk of "more efficient" or "wider" spacing, they should be willing to practice what they preach at all times—good and bad.

Human nature always comes into play, though, when a producer finds a good discovery. He, like everyone else, is inclined to become a "pirate," and tries to get his oil out of the ground as rapidly as possible, even if it means discarding his efficient spacing ideals.



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